PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
CRT1407

MULTI-PLAY COMPACT DISC PLAYER

CDX-M92ZBM EW

COMPACT disc DIGITAL AUDIO

- This additional service manual is designed to be used together with Model CDX-M50/EW Service Manual (CRT1289). Refer to it for finding parts numbers, etc. which are not shown in this manual.

Model	BMW No.
CDX-M92ZBM/EW	65 12 8 355 801

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1. SAFETY INFORMATION

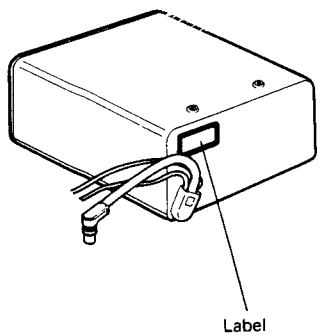
1. Safety Precautions for those who Service this Unit.

- **Follow the adjustment steps (see pages 3 through 24) in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

2. A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.



3. The triangular label is attached to the mechanism unit frame.

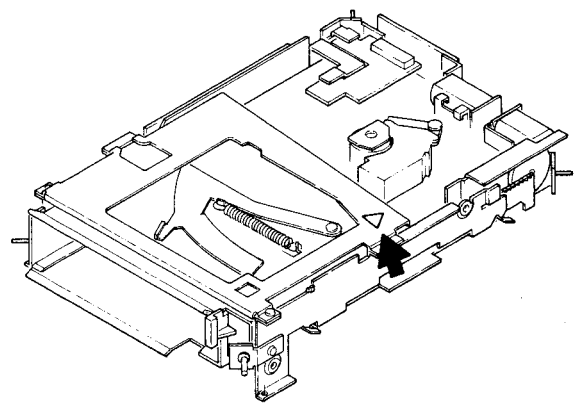


Fig. 1

4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.

Wavelength = 780 nanometers

Radiant power = 69.7 microwatts (Through a circular aperture stop having a diameter of 80 millimeters)

0.55 microwatts (Through a circular aperture stop having a diameter of 7 millimeters)

2. ADJUSTMENT

1) Precautions

- The CDX-M92ZBM uses a single power supply (+5V) for the regulator. The signal reference potential, there fore, is connected to pin no. 21 (approx. 2.5V) of IC351 (CXA1081Q) instead of GND. (VC or VREF at test point)

If VC and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to VC and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to VC with the channel 2 negative probe connected to GND.

And since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident VC comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing the another key. Otherwise, there is risk of the actuator being destroyed. (For example, do not press the [+] key while a disc is being moved from magazine to clamp after regulator is switched ON in steps 3 thru 5 of Tracking Balance Adjustment I. Nor should the [EJECT] key (in M92ZBM) be pressed during focus closed status.)

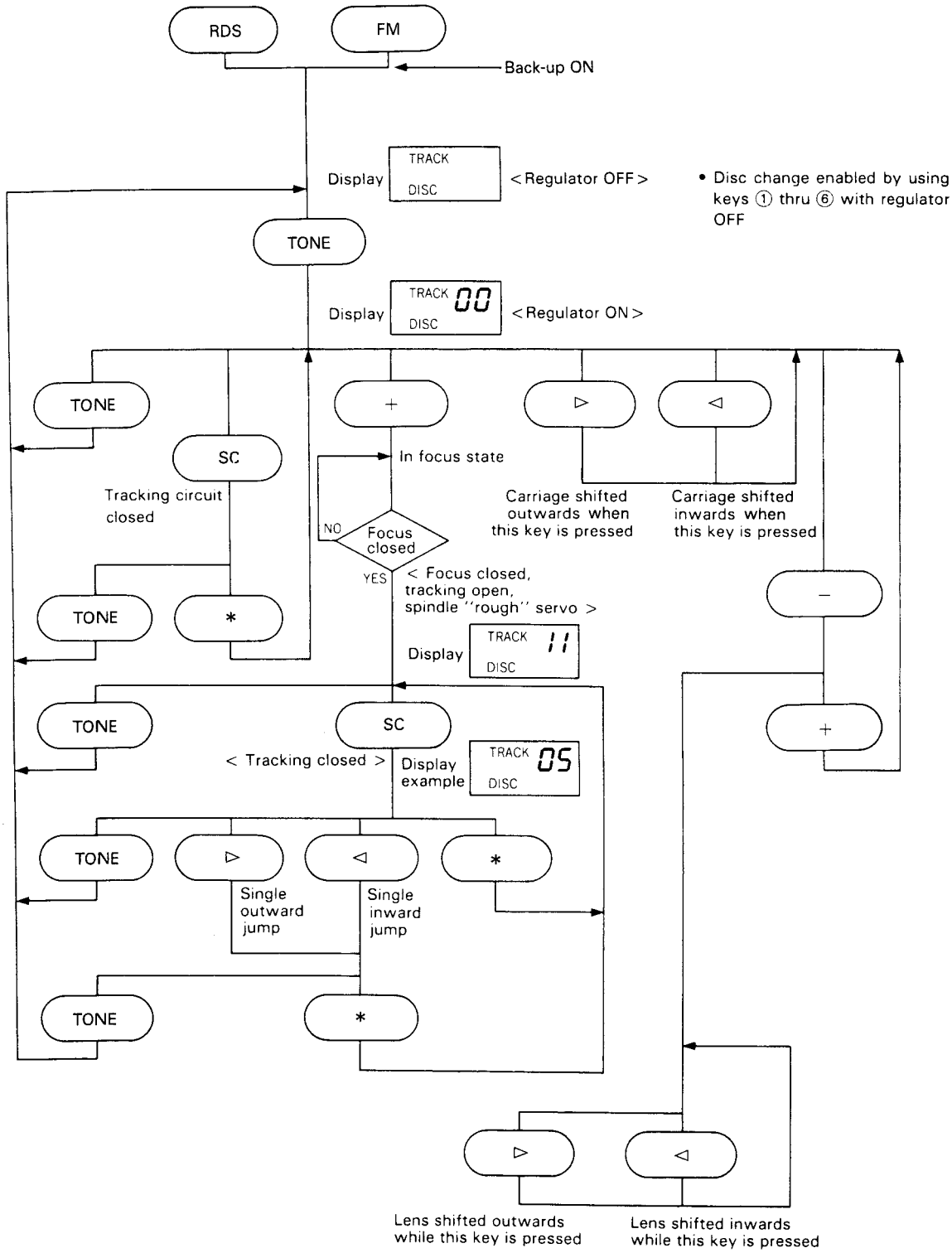
2) Since CDX-M92ZBM is used in combination with a multi-CD control section such as KE-92ZBM, all adjustment key operations are executed at that control section.
The KE-92ZBM, test mode starting procedure and key operations are included for reference purposes. All keys mentioned in the main text are KE-92ZBM keys.

- Text mode starting procedure
Switch back-up ON while pressing the [RDS] and [FM] keys together.
- Test mode cancellation
Switch the KE-92ZBM and CDX-M92ZBM back-up OFF.)

Key functions during test mode.

Key	Function
TONE	Regulator ON/OFF
▷	FWD kick
◁	REV kick
SC	Tracking close
*	Tracking open
+	Focus close
–	Carriage/tracking switching
1~6	Disc select

• Flow Chart


RDS
FM
Back-up ON
Display
TRACK
DISC
<Regulator OFF>
• Disc change enabled by using keys ① thru ⑥ with regulator OFF
TONE
Display
TRACK 00
DISC
<Regulator ON>
TONE
+
▷
◁
SC
In focus state
Tracking circuit closed
Carriage shifted outwards when this key is pressed
Carriage shifted inwards when this key is pressed
NO
Focus closed
YES
< Focus closed, tracking open, spindle "rough" servo >
TONE
*
Display
TRACK 11
DISC
–
TONE
SC
+
< Tracking closed >
Display example
TRACK 05
DISC
TONE
▷
◁
*
Single outward jump
Single inward jump
TONE
*
▷
◁
Lens shifted outwards while this key is pressed
Lens shifted inwards while this key is pressed

• **Adjustment Points**

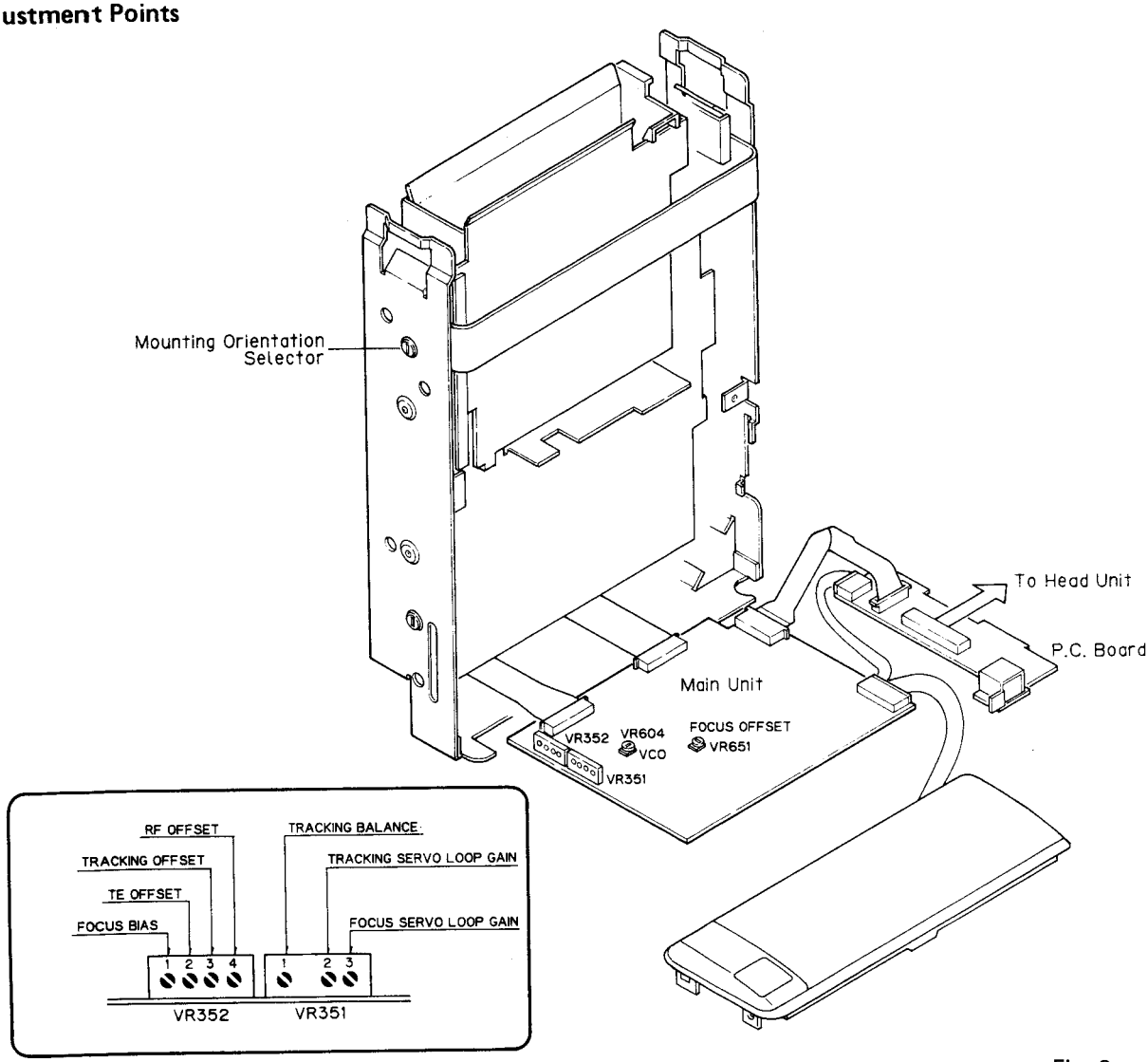


Fig. 2

2.1 Focus Offset Adjustment

● Purpose: To adjust the electrical offset of the focus amplifier to zero.

● Maladjustment symptoms: No focus closing

● Measuring equipment/ jigs	• Multi-meter or oscilloscope
● Measuring point	• FEO2
● Test disc and setting	• Empty magazine, test mode
● Adjustment position	• VR651

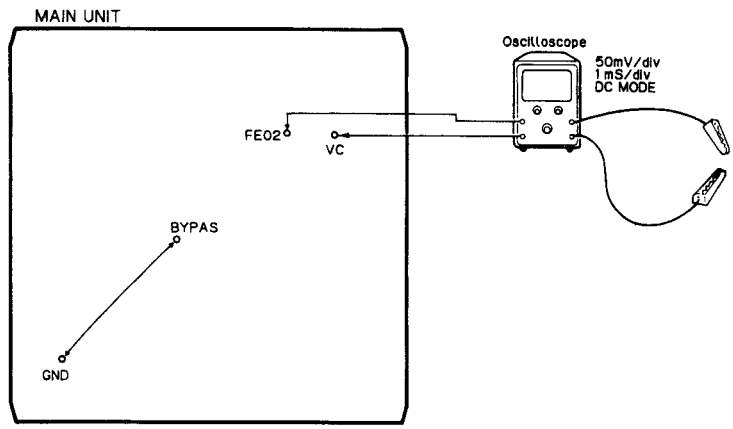


Fig. 3

Adjustment Procedure

1. Connect BYPAS to GND.
2. Switch regulator ON.
3. Using VR651, adjust the FEO2 DC voltage in reference to VC to a value of 0 ± 25mV.

2.2 VCO Free Run Frequency Adjustment

● Purpose: To adjust the EFM decoder reference clock free- run frequency to a suitable value

● Maladjustment symptoms: Spindle lock not possible, distorted sound or no sound at all

● Measuring equipment/ jigs	• Frequency counter
● Measuring point	• Pin No. 70 ($\overline{\text{PLCK}}$) of IC701 (CXD1167Q)
● Test disc and setting	• Empty magazine • Test mode
● Adjustment position	• VR604

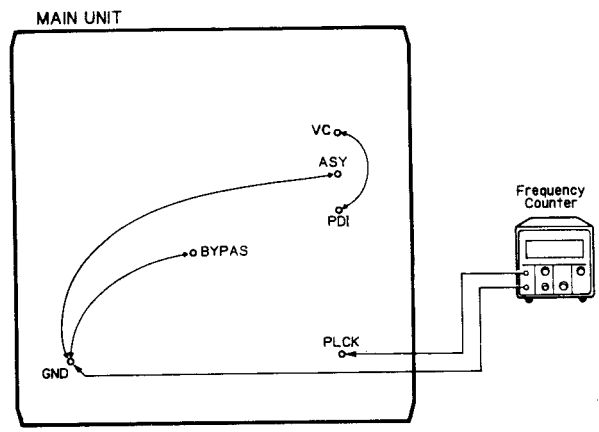


Fig. 4

Adjustment Procedure

1. Connect pin No. 7 (TP ASY) of IC351 to GND.
   Connect BYPAS to GND.
2. Connect pin no. 1 (TP VC) of IC601 to pin no. 28 (TP PDI).
3. Switch regulator ON while in test mode.
4. Connect the frequency counter to pin No.70 (TP PLCK) of IC701 (CXD1167Q).
5. Adjust VR604 to obtain a frequency of 4.57 ± 0.005MHz.
6. Switch regulator OFF.
7. Disconnect the leads connecting TP VC to TP PDI, and TP ASY to GND.

Note: Connect TP VC and TP PDI with leads kept as short as possible.

Note: Connect the frequency counter ground to TP GND as shown in the figure.

2.3 RF Offset Adjustment

● Purpose: To adjust the RF amplifier offset to a suitable value

● Maladjustment symptoms: Focus closure fails readily

● Measuring equipment/ jigs	• Oscilloscope
● Measuring point	• RFO
● Test disc and setting	• Empty magazine • Test mode
● Adjustment position	• VR352-4 (RFO)

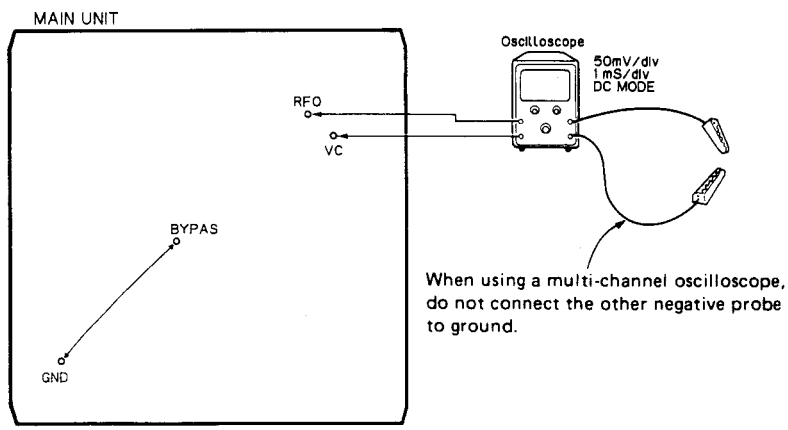


Fig. 5

Adjustment Procedure

1. Connect BYPAS to GND.
2. Switch regulator ON.
3. Using the oscilloscope, measure the RFO DC voltage in reference to VC, and adjust VR352-4 (RFO) to obtain a reading of +40 ± 10mV.

2.4 Tracking Offset Adjustment

● Purpose: To adjust the electrical offset of the tracking amplifier to zero

● Maladjustment symptoms: Search times too long, carriage run-away

● Measuring equipment/ jigs	• Oscilloscope
● Measuring point	• TAO low-pass filter output
● Test disc and setting	• Empty magazine • Test mode
● Adjustment position	• VR352-3 (TO)

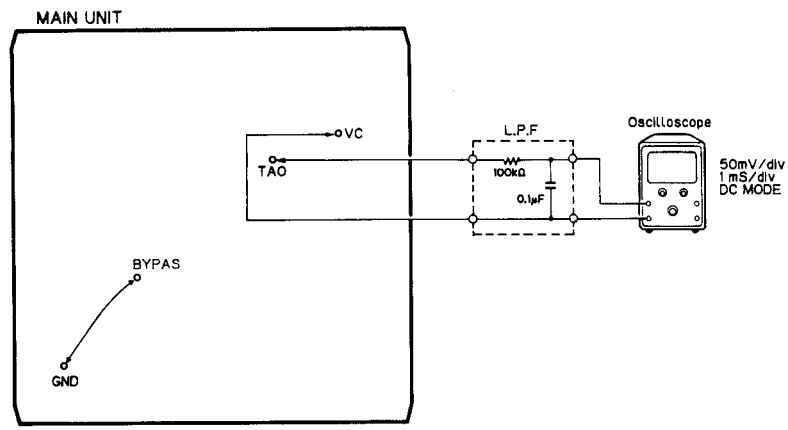


Fig. 6

Adjustment Procedure

1. Insert a low-pass filter between TAO and VC.
2. Check that BYPAS is connected to GND.
3. Switch regulator ON.
4. Using the oscilloscope, measure the TAO LPF output DC voltage in reference to VC, and adjust VR352-3 (TO) to obtain a reading of 0 ± 25mV.
   The low-pass filter may be left in place for later adjustments.

2.5 TE Offset Adjustment - I

● Purpose: To adjust the electrical offset of the tracking servo to zero.

● Maladjustment symptoms: Search times too long, carriage run-away

● Measuring equipment/ jigs	• DC voltmeter
● Measuring point	• TAO low-pass filter output
● Test disc and setting	• Empty magazine • Test mode
● Adjustment position	• VR352-2 (TEO)

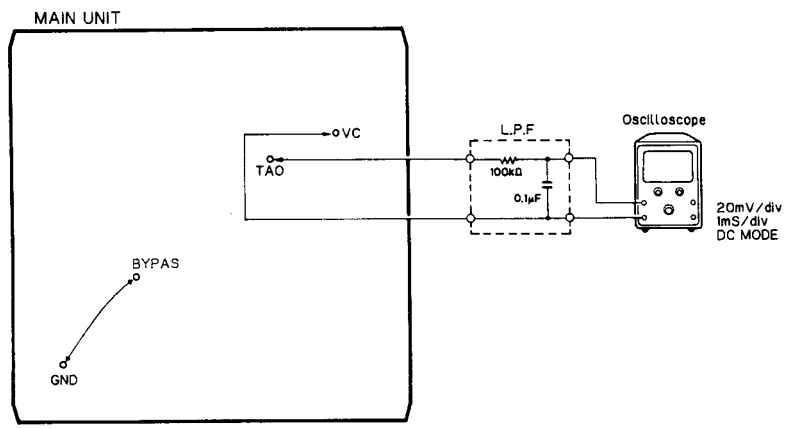


Fig. 7

Adjustment Procedure

1. Check that BYPAS is connected to GND.
2. Switch regulator ON while in test mode.
3. Press the [SC] key to close tracking.
4. Using VR352-2 (TEO), adjust the TAO LPF output DC voltage in reference to VC to a value of 0 ± 10mV.
5. Switch regulator OFF.

2.6 Tracking Balance Adjustment - I

● Purpose: To adjust the tracking servo offset to zero.

● Maladjustment symptoms: Search times too long, poor playability, carriage run-away

● Measuring equipment/ jigs	• Oscilloscope
● Measuring point	• TEY (Tracking error signal), low-pass filter output
● Test disc and setting	• SONY TYPE 4 (or TYPE 3) • Test mode
● Adjustment position	• VR351-1 (T. BAL)

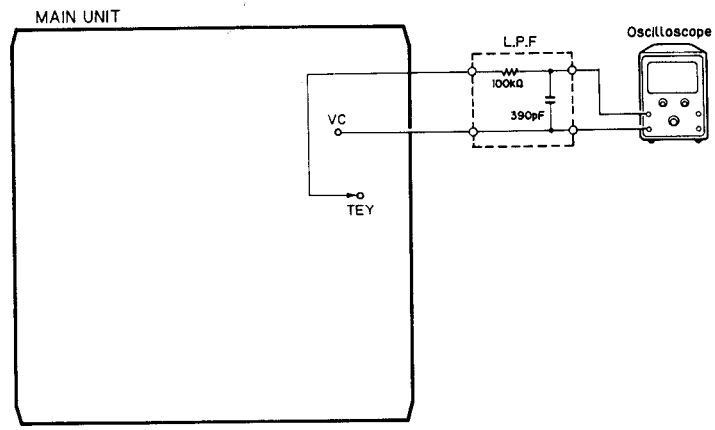
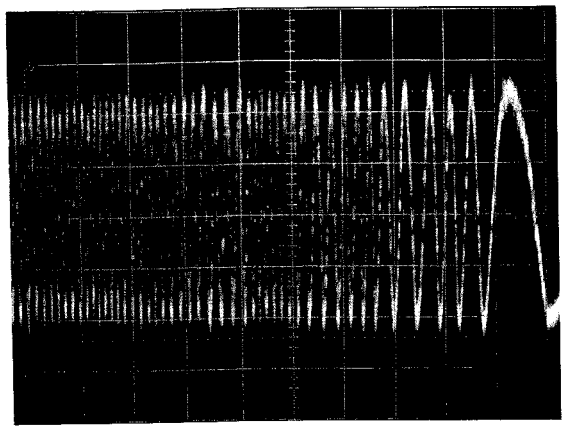


Fig. 8

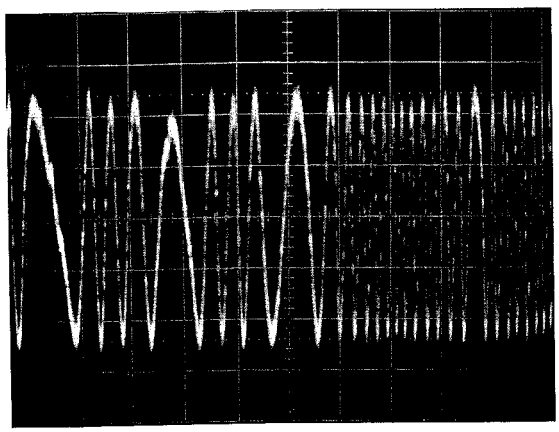
Adjustment Procedure

1. After checking that regulator is OFF, connect the low-pass filter as shown in the diagram.
2. Disconnect BYPAS from ground.
3. Set the test disc (SONY TYPE 4) in magazine tray 6 and load the magazine. Switch regulator ON.
4. Using the [▷] or [◁] key, move the pick-up to about the center of the signal surface.
5. Press the [+] key to close focus.
6. Using an oscilloscope, observe the TEY signal in respect to VC. Then adjust VR351-1 (T.BAL) to set the positive and negative amplitudes to the same levels. (See Fig. 9-11)
7. Switch the power OFF.
   The low-pass filter may be left in place for later adjustments.



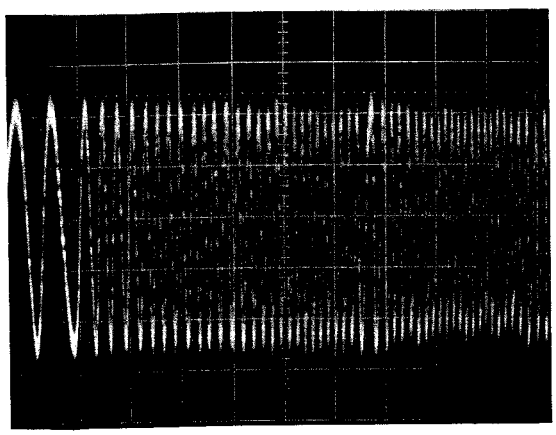
+5% NG

Fig. 9



±0% OK

Fig. 10



−5% NG

10ms/div.
0.2V/div.
DC Mode

Fig. 11

2.7 Tangential Skew Check

● Purpose: To check whether tangential skew has been misaligned or not when replacing the pick-up unit.

● Maladjustment symptoms: No disc playback; track jumping

● Measuring equipment/ jigs	• Oscilloscope, screwdriver
● Measuring point	• RFO
● Test disc and setting	• SONY TYPE 4 (or TYPE 3) • Normal mode
● Adjustment position	• Pick-up tangential adjustment screw

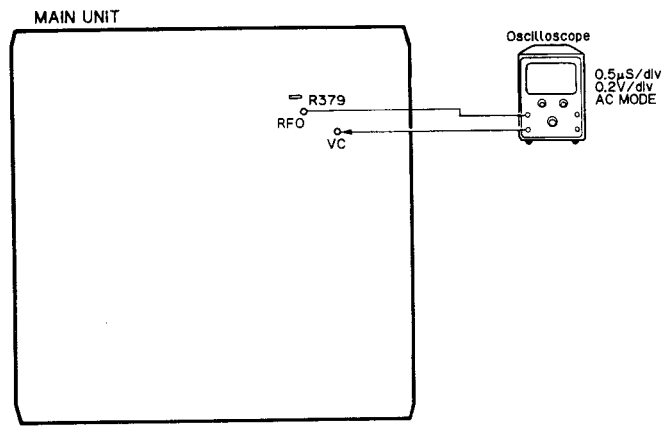
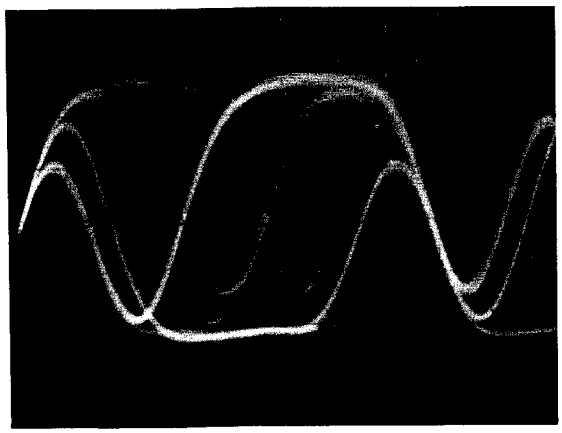


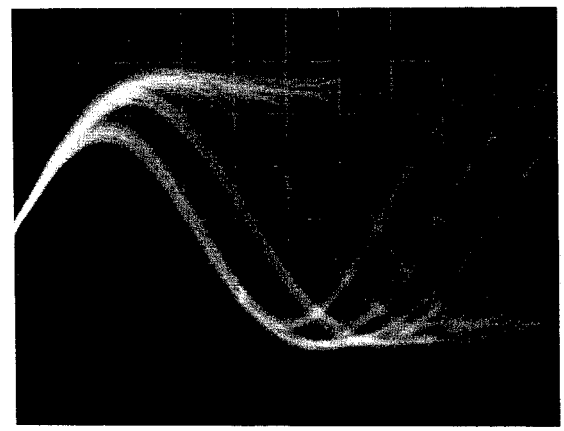
Fig. 12

Adjustment Procedure (with R379 removed)

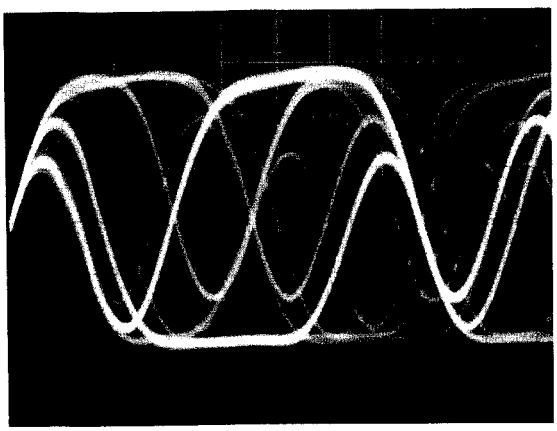
1. Remove R379 (but reconnect after completing adjustment).
2. Play tune TNO 7 in normal mode. (TYPE 3: TNO 23)
3. Check that the valley at the 11T section of the RF waveform is flat.
4. If out of adjustment, readjust to obtain a flat RF waveform. (See Fig. 13-18) Take care not to knock the pick-up with the screwdriver at this stage. (This kind of accident can result in loss of focus.)
5. Switch the power OFF and reconnect R379.
6. Apply "screw-lock" to the tangential adjustment screw.
7. After adjusting tangential skew, also adjust the grating.
8. If tangential skew is seriously out of adjustment, carriage stopping and run-away tend to occur in normal mode. In this case,
   a) Switch to test mode,
   b) Shift the pick-up to signal surface center using [▷] or [◁] key,
   c) Press the [+] key to close focus.
   d) Press the [SC] key to close tracking.
   e) Observe RFO in respect to VC, and turn the tangential adjustment screw to obtain a flat waveform at the 11T section.
   f) Repeat the adjustment resuming from step 2.



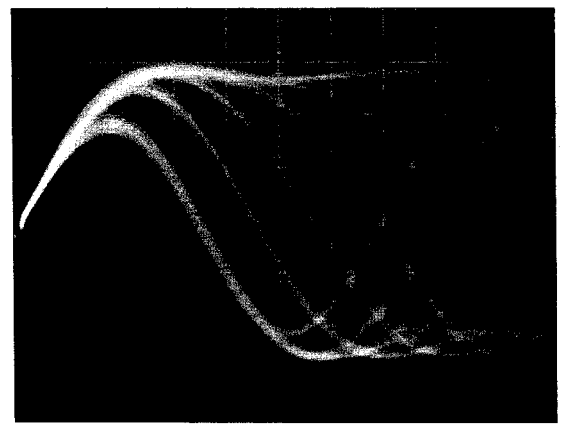
NG Fig. 13



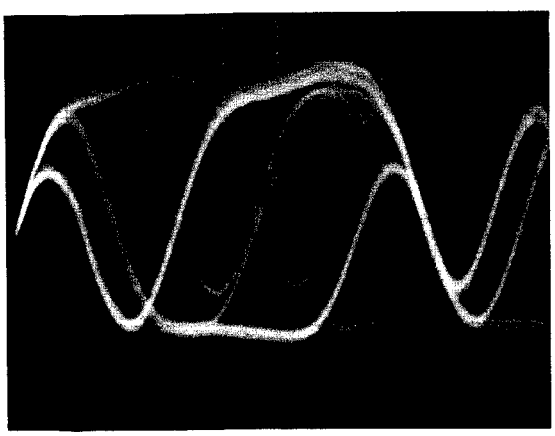
NG Fig. 14



OK Fig. 15

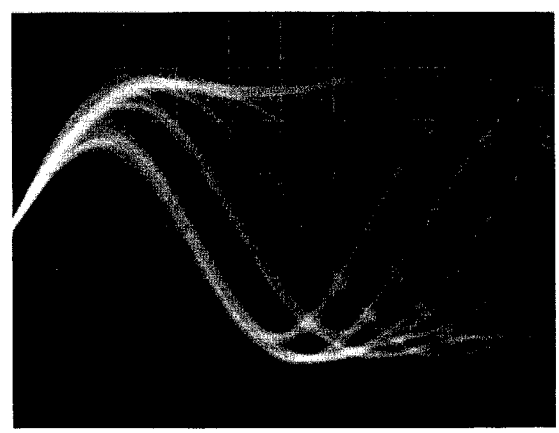


OK Fig. 16



NG Fig. 17

Play tune TN0 7 (TYPE4)

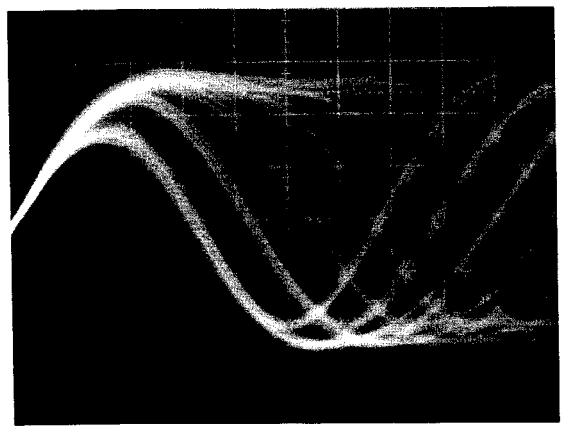


NG Fig. 18

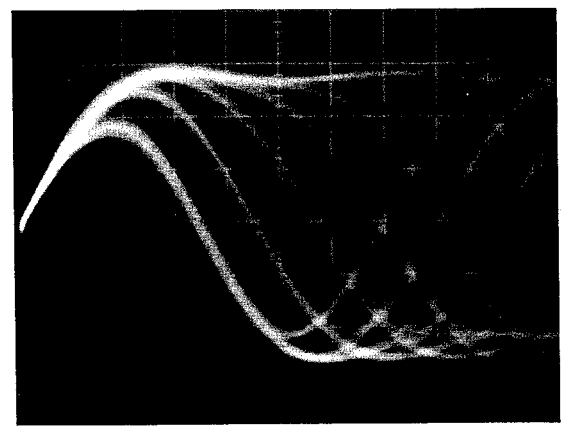
Play tune TN0 12 (TYPE4)

Adjustment Procedure (without R379 removed)

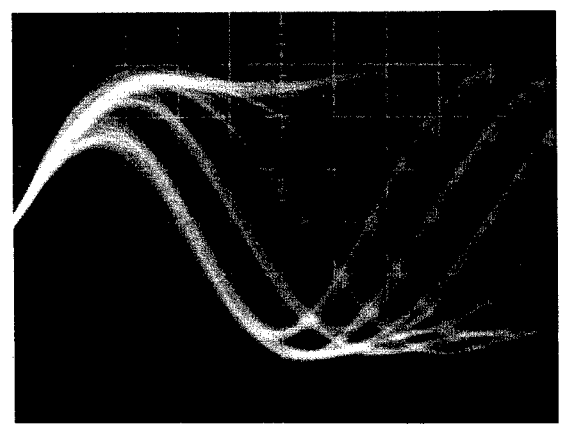
1. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
2. Turn the tangential adjustment screw to obtain a good RF waveform eye pattern. Turn the adjustment screw both clockwise and counterclockwise to points where the eye pattern deteriorates, and take the midway point as the adjustment point. As a general guide, look for an overall clear waveform, and one of the diamond shapes in the eye pattern. The diamond shapes should appear in fine lines at the point of optimum adjustment. Take care not to knock the pick-up with the screwdriver at this stage. (This kind of accident can result in loss of focus.) (See Fig. 19-21)
3. Apply "screw-lock" to the tangential adjustment screw.
4. After adjusting tangential skew, also adjust the grating.



NG Fig. 19



OK Fig. 20



NG Fig. 21

2.8 Grating Adjustment

● Purpose: The grating may need adjustment in a replaced pick-up assembly.

● Maladjustment symptoms: No disc playback; track jumping

● Measuring equipment/ jigs ● Measuring point ● Test disc and setting ● Adjustment position	• Oscilloscope, clock driver, grating adjustment filter (bandpass filter) (GGF-133) AC millivoltmeter, two low-pass filters • TEY, E LPF output, F LPF output • SONY TYPE 4 (or TYPE 3) • Test mode • Pick-up grating adjustment hole

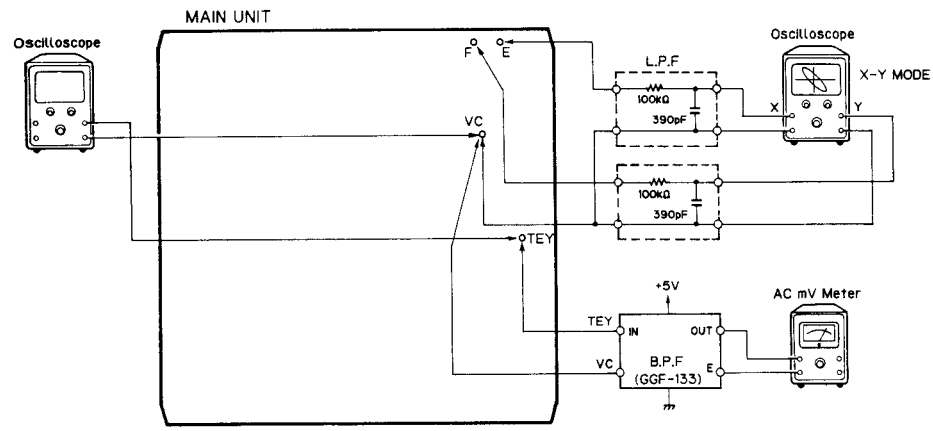


Fig. 22

Adjustment Procedure

1. Connect a low-pass filter (100k, 390p) to test points E, F, and VC as shown in the above diagram.
2. Switch regulator ON in test mode, and load a disc.
3. Press the [+] key to close focus.
4. Press the [SC] key to close tracking.
5. Using the [▷] or [◁] key, move the pick-up to about the center of the signal surface (tune TNO 6). (TYPE 3: TNO 7)
6. Press the [*] key to open tracking.
7. While monitoring the TEY filter output by AC milli- voltmeter, turn the grating adjustment hole slowly. The AC voltage increases and decreases while turning the screw. Search for the minimum voltage level. (This corresponds to the position where the grating is on a track, and is referred to as the null point.)
8. Then while monitoring TEY by oscilloscope, turn the driver slowly clockwise from the null point (as seen from under the pick-up) until the first waveform peak amplitude is reached. (See Fig. 24-29)

9. With the E low-pass filter output connected to the X axis of the oscilloscope, and the F low-pass filter output connected to the Y axis, apply an input in AC mode and observe the Lissajous figure.
10. Using the driver, adjust the Lissajous figure to a single line (or as close as possible).
11. Switch regulator OFF and remove the filters.

B.P.F. (GGF-133)

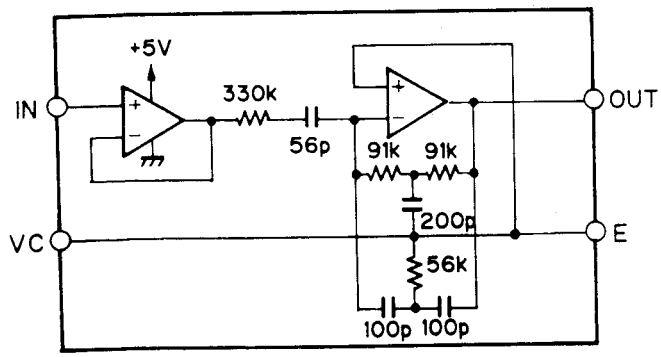


Fig. 23

TEY waveform 10ms/div, 500mV/div

Null Point

Lissajous figure (AC input)
Horizontal axis E 20mV/div
Vertical axis F 20mV/div

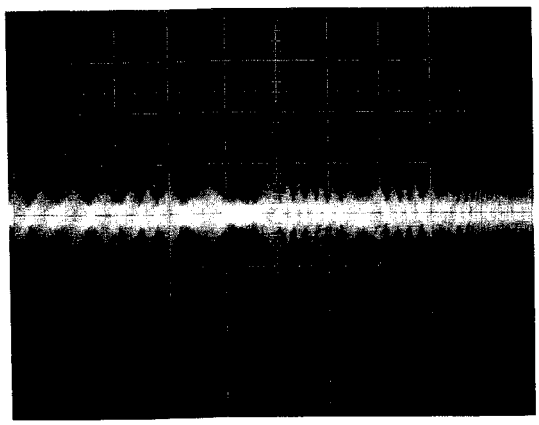


Fig. 24

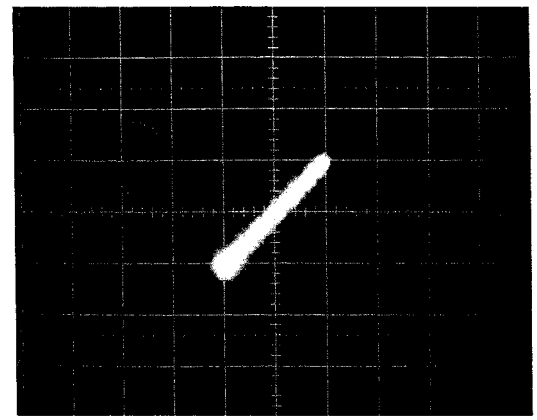


Fig. 25

"Rough" adjustment

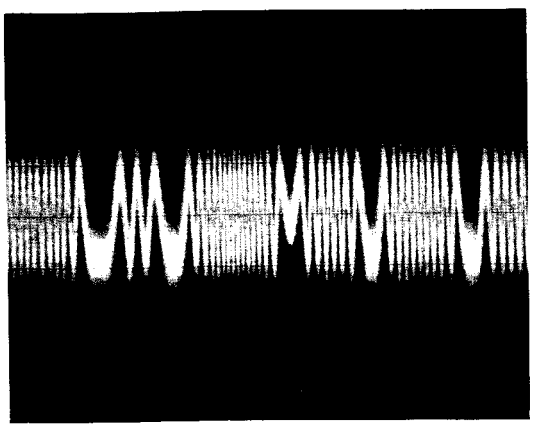


Fig. 26

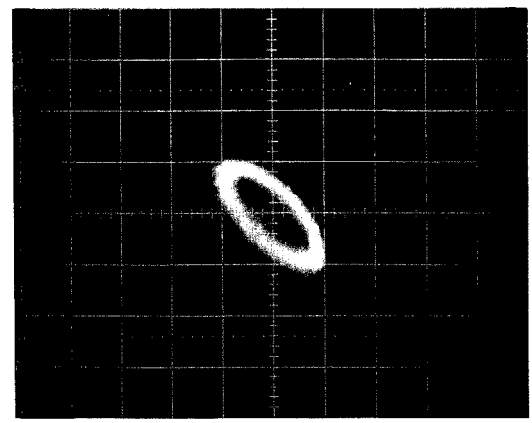


Fig. 27

Final adjustment

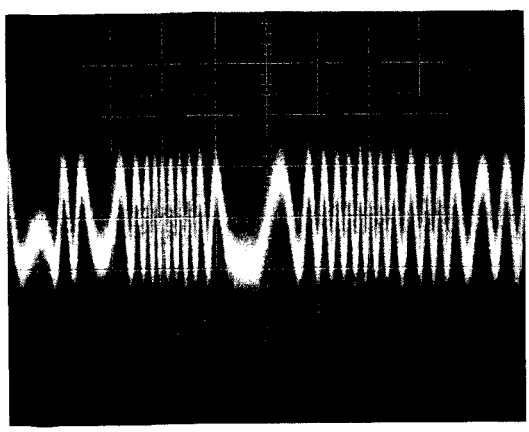


Fig. 28

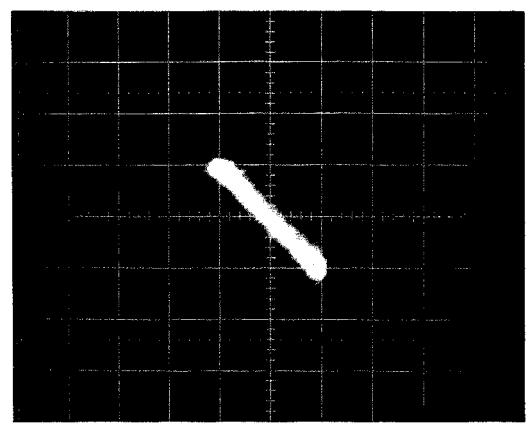


Fig. 29

2.9 Focus Bias Adjustment

● Purpose: To adjust the focus servo bias to an optimum value

● Maladjustment symptoms: Focus closing difficulty, poor playability

● Measuring equipment/ jigs	• Oscilloscope
● Measuring point	• RFO
● Test disc and setting	• SONY TYPE 4 (or TYPE 3) • Normal mode
● Adjustment position	• VR352-1 (FEB)

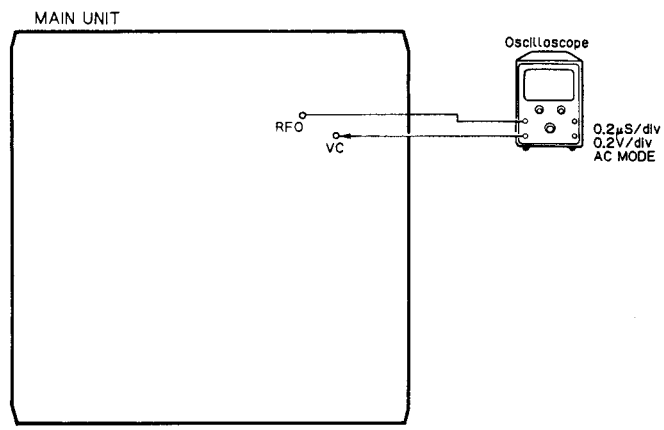
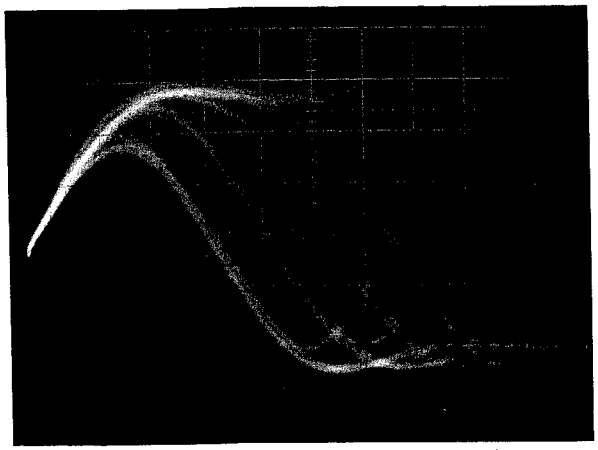


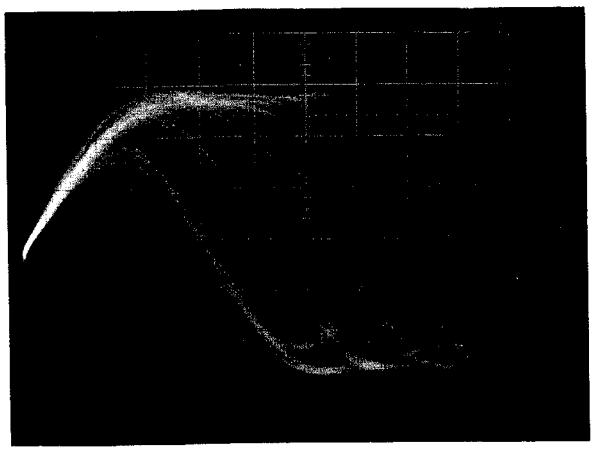
Fig. 30

Adjustment Procedure

1. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
2. Observe RFO in respect to VC in the oscilloscope, and adjust VR352-1 (FEB) to obtain maximum RF and optimumeye pattern. (See Fig. 31 and 32)



OK Fig. 31



0.2μs/div.
0.2V/div.
AC Mode

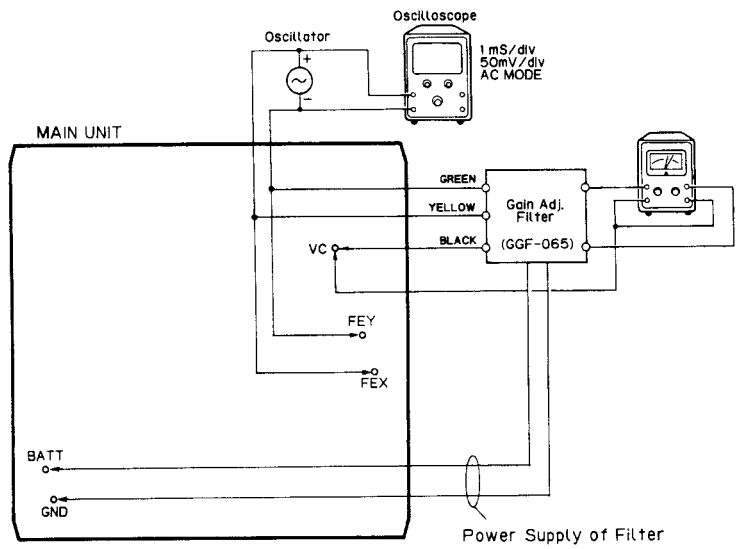
Before adjustment Fig. 32

2.10 Focus Servo Loop Gain Adjustment

● Purpose: To adjust the focus servo loop gain to an optimum value

● Maladjustment symptoms: Poor playability, reduced resistance to vibration, focus closure fails readily

● Measuring equipment/ jigs	• Oscillator, gain adjustment filter (GGF-065), dual meter milli-voltmeter
● Measuring point	• FEX, FEY
● Test disc and setting	• SONY TYPE 4 (or TYPE 3) • Normal mode
● Adjustment position	• VR351-3 (FG)



Note: Leave the negative side of the other oscilloscope channel open.

Connect the negative milli-voltmeter lead to VC, and do not connect VC to the power supply ground.

Fig. 33

Adjustment Procedure

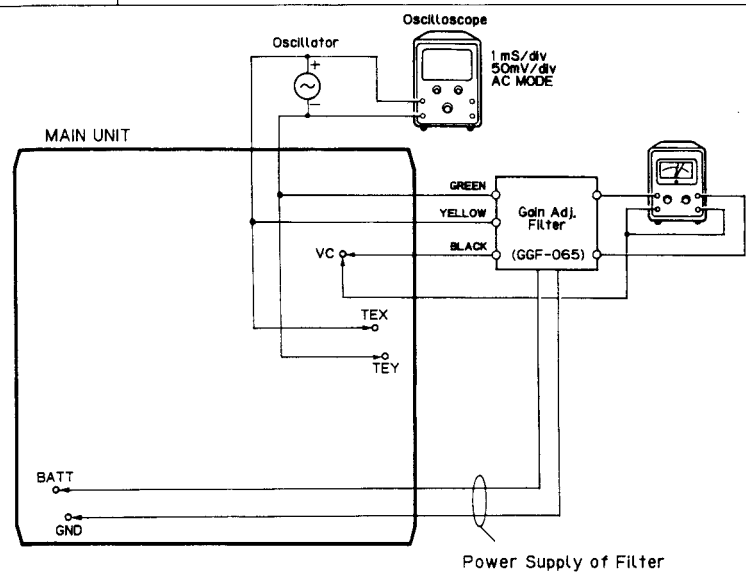
1. After checking that the power is OFF, connect the gain adjustment filter and measuring equipment as shown in the above diagram.
2. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
3. Set the oscillator to 1kHz, and observe the FEX/FEY output in the oscilloscope. Adjust the oscillator output to obtain a FEX/FEY output of 100mVp-p.
4. Adjust VR351-3 (FG) to obtain a milli-voltmeter difference of 0 ±0.5dB.

2.11 Tracking Servo Loop Gain Adjustment

● Purpose: To adjust the tracking servo loop gain to an optimum value

● Maladjustment symptoms: Poor playability, reduced resistance to vibration

● Measuring equipment/ jigs	• Oscillator, gain adjustment filter (GGF-065), dual meter milli-voltmeter
● Measuring point	• TEX, TEY
● Test disc and setting	• SONY TYPE 4 (or TYPE 3) • Normal mode
● Adjustment position	• VR351-2 (TG)



Note: Leave the negative side of the other oscilloscope channel open.

Connect the negative milli-voltmeter lead to VC, and do not connect VC to the power supply ground.

Fig. 34

Adjustment Procedure

1. After checking that the power is OFF, connect the gain adjustment filter and measuring equipment as shown in the above diagram.
2. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
3. Set the oscillator to 1.4kHz, and observe the TEX/TEY output in the oscilloscope. Adjust the oscillator output to obtain a TEX/TEY output of 100mVp-p.
4. Adjust VR351-2 (TG) to obtain a milli-voltmeter difference of 0 ±0.5dB.

2.12 TE Offset Adjustment - II

● Purpose: To adjust the electrical offset of the tracking servo to zero.

● Maladjustment symptoms: Search times too long, carriage run-away

● Measuring equipment/ jigs	• DC voltmeter
● Measuring point	• TAO low-pass filter output
● Test disc and setting	• Empty magazine • Test mode
● Adjustment position	• VR352-2

Adjustment Procedure

Same as for TE offset adjustment - I, but with the DC voltage of the TAO LPF output adjusted to 0 ± 50mV.
The purpose of this additional adjustment is to correct any deviations generated when carrying out the tracking balance and tracking servo loop gain adjustments after completing TE offset adjustment - I.

2.13 Tracking Balance Adjustment - II

● Purpose: To adjust the tracking servo offset to zero.

● Maladjustment symptoms: Search times too long, poor playability, carriage run-away

● Measuring equipment/ jigs	• Oscilloscope
● Measuring point	• TEY low-pass filter output
● Test disc and setting	• SONY TYPE 4 (or TYPE 3) • Test mode
● Adjustment position	• VR351-1

Adjustment Procedure

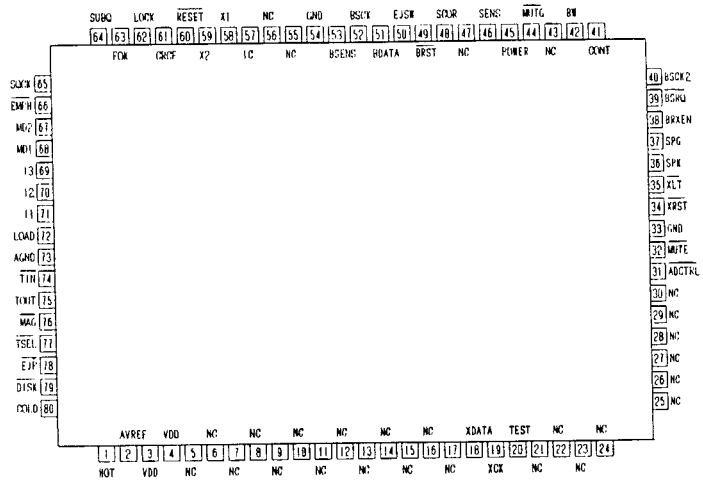
Steps 1 thru 5 same as tracking balance adjustment-I.

6. Check that the level difference between the positive and negative amplitudes of the TEY signal is within 5% (See Fig. 9-11). If greater than 5%, adjust with VR351-1.
7. If further adjustment was necessary in step 6, repeat TE offset adjustment -II.

• IC

*IC's marked by * are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

* PD4244B



• Pin Functions (PD4244B)

Pin	Pin name	I/O	Output Format	Function
1	HOT	input		High temperature detector
2	AVREF			A/D reference voltage
3	VDD			VDD
4	VDD			VDD
5-17	NC			
18	XDATA	output	C	LSI data
19	XCK	output	C	LSI clock
20	TEST	input		Unit check mode
21-30	NC			
31	$\overline{\text{ADCTRL}}$	output	NH	AVref control output
32	$\overline{\text{MUTE}}$	output	NH	Line mute output
33	GND			
34	$\overline{\text{XRST}}$	output	NH	LSI reset
35	$\overline{\text{XLT}}$	output	NH	LSI data latch
36	SPK	output	NH	Spindle kick gain switching
37	SPG	output	NH	Spindle gain switching
38	BRXEN	output	C	Pioneer standard bus reception enable output.
39	$\overline{\text{BSRQ}}$	output	C	Pioneer standard bus
40	BSCK2	output	C	Pioneer standard bus shift clock output
41	CONT	output	C	Linear driver ON/OFF control output
42	BW	output	C	Spindle drive circuit range switching
43	NC			
44	MUTG	output	C	DSP mute output
45	POWER	output	C	Regulator (+5V) control output
46	SENS	input		CD LSI internal status monitor input
47	NC			
48	SCOR	input		Sub-code synchronization input
49	$\overline{\text{BRST}}$	input		Pioneer standard bus reset input
50	EJSW	input		Eject switch input
51	BDATA	input/ output		Pioneer standard bus data

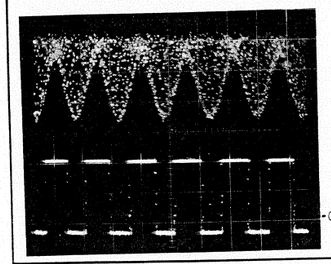
Pin	Pin name	I/O	Output Format	Function
52	BSCK	input		Pioneer standard bus shift clock input
53	BSENS			+B detect
54	GND			
55, 56	NC			
57	IC			Connect to GND
58	X1	input		Oscillator input
59	X2	output		Oscillator output
60	$\overline{\text{RESET}}$			Reset
61	CRCF	input		CR check input
62	LOCK	input		Spindle lock monitor
63	FOK	input		Focus OK
64	SUBQ	input		Sub-code data input
65	SQCK	output	NH	Sub-code clock
66	$\overline{\text{EMPH}}$	output	NH	Emphasis selector output
67	MD2	output	NH	IC701 mode control. Digital output ON/OFF
68	MD1	output	NH	IC701 mode control. Digital output ON/OFF
69-71	I3-I1	output	NH	Loading motor driver control output
72	LOAD	output	NH	CD mechanism power supply on/off
73	AGND			A/D converter GND
74	$\overline{\text{TIN}}$	input		Tray position detector switch 1
75	TOUT	input		Tray position detector switch 2
76	$\overline{\text{MAG}}$	input		Magazine lock switch input
77	$\overline{\text{TSEL}}$	input		Tray position detector photo-sensor
78	$\overline{\text{EJP}}$			Eject position switch
79	$\overline{\text{DISK}}$			Disc detector input
80	COLD			Low temperature detector

Output Format	Meaning
C	C-MOS
NH	High resistivity N channel open drain

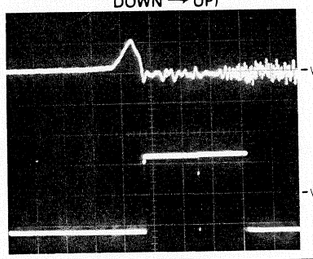
Note: 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage
G: GND VC: Pin 21 of CXA1081Q (2.5V)

• Wave Forms

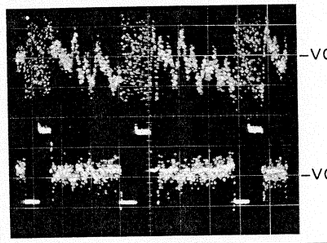
① CH1: RFO 0.4V/div. 0.4ms/div.
② CH2: MIRR 2V/div.
Test mode: Tracking open



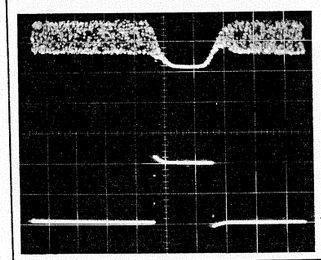
⑦ CH1: FEY 1V/div. 4ms/div.
⑧ CH2: SENS 2V/div.
Normal mode: Focus close (The lens moves DOWN → UP)



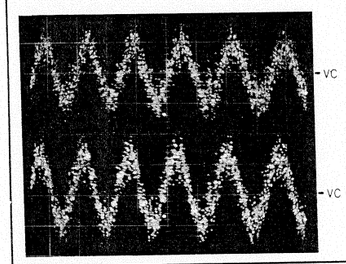
⑨ CH1: TEY 0.4V/div. 4ms/div.
⑪ CH2: TAO 0.4V/div.
Normal mode: Track search (80 track jump)



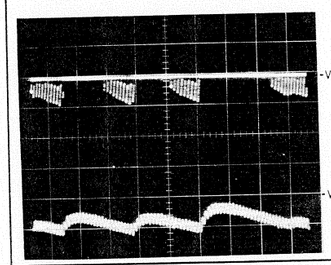
① CH1: RFO 1V/div. 0.4ms/div.
③ CH2: DFCT 2V/div.
Normal mode: The defect part passes 800μm.



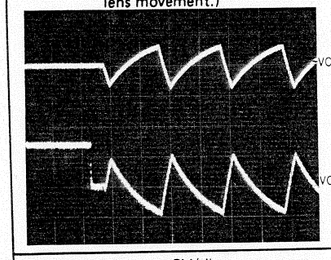
⑨ CH1: TEY 0.4V/div. 0.4ms/div.
⑩ CH2: TZC 0.4V/div.
Test mode: Tracking open



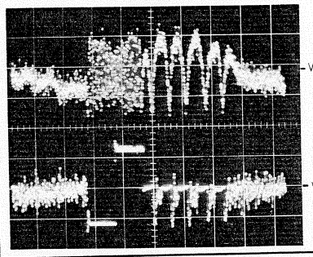
⑫ CH1: SLO 0.4V/div. 2S/div.
⑬ CH2: ATSC 0.02V/div.
Normal mode: PLAY



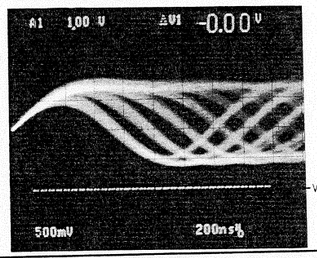
④ CH1: FEO 0.2V/div. 0.4S/div.
⑤ CH2: Pin 7 of CXA1082BQ 0.1V/div.
Test mode: Connect the FOK2 to GND.
Focus search is performed.
(CH1 is the same phase as the lens movement.)



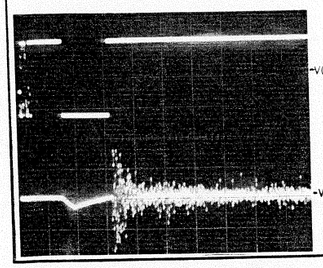
⑨ CH1: TEY 0.4V/div. 2ms/div.
⑪ CH2: TAO 0.4V/div.
Normal mode: Brake wave form when track search is performed.



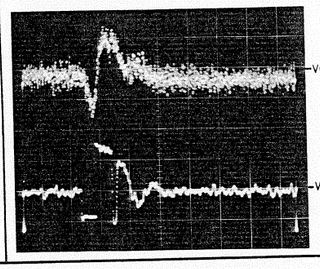
① RFO 0.5V/div. 200ns/div.
Normal mode: PLAY



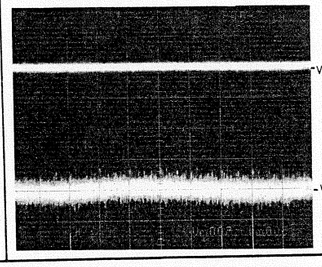
⑥ CH1: FOK2 2V/div. 0.2S/div.
④ CH2: FEO 0.4V/div.
Normal mode: Focus close



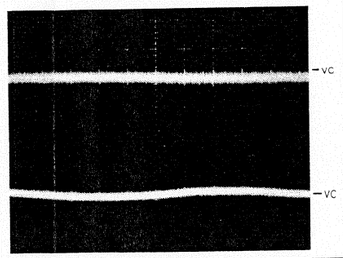
⑨ CH1: TEY 0.4V/div. 0.4ms/div.
⑪ CH2: TAO 0.4V/div.
Test mode: Single jump



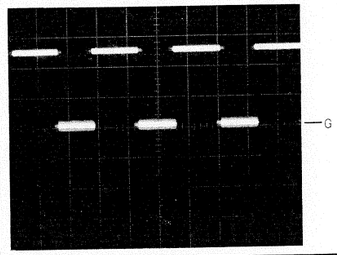
⑦ CH1: FEY 0.5V/div. 20ms/div.
⑭ CH2: FEO2 0.5V/div.
Normal mode: PLAY



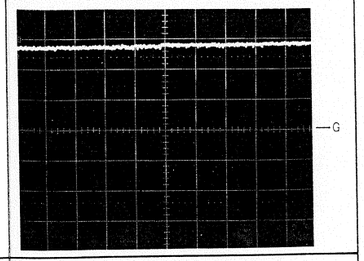
⑨ CH1: TEY 0.5V/div. 20ms/div.
⑪ CH2: TAO 0.5V/div.
Normal mode: PLAY



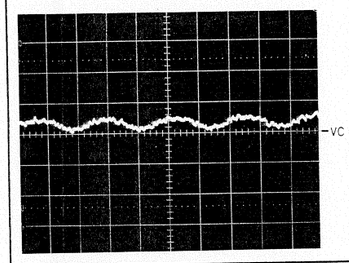
⑰ MDS 2V/div. 50μs/div.
PLAY



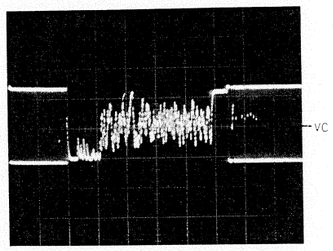
⑲ GFS 2V/div. 200μs/div.
PLAY



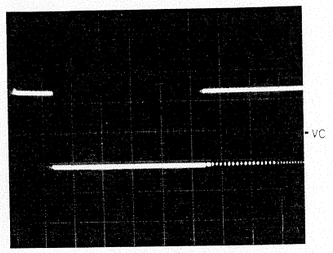
⑮ SPDLO 2V/div. 50ms/div.
PLAY



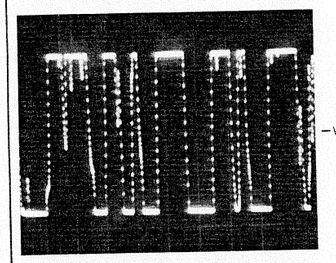
⑰ MDS 2V/div. 0.4S/div.
TRACK COUNT SEARCH



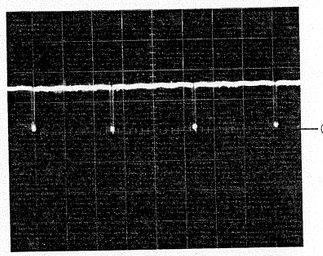
⑲ GFS 2V/div. 0.4S/div.
TRACK COUNT SEARCH



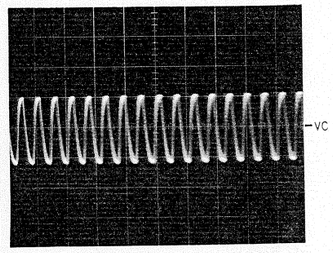
⑮ SPDLO 2V/div. 40ms/div.
12cm DISC TRACK COUNT SEARCH



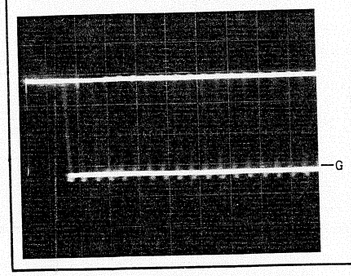
⑱ MDP 2V/div. 200μs/div.
PLAY



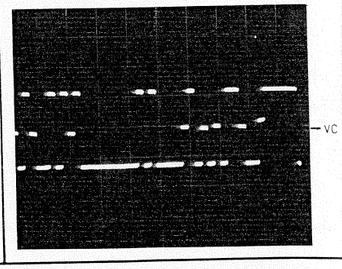
⑳ VCOO 2V/div. 0.2μs/div.
PLAY



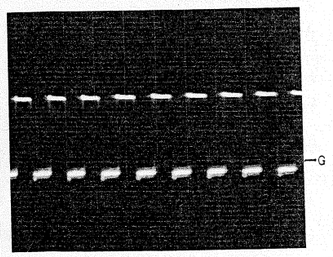
⑯ EFM 2V/div. 0.5μs/div.
PLAY



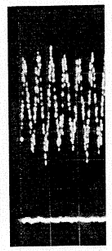
⑱ MDP 2V/div. 10ms/div.
TRACK COUNT SEARCH



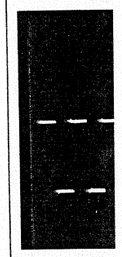
㉑ PLCK 2V/div. 0.2μs/div.
PLAY



⑨CH1 : TEY
⑪CH2 : TAO
TRACI



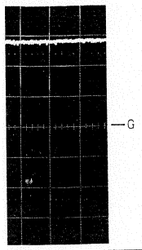
㉙LRCK(IC7
2V/div. 5μs



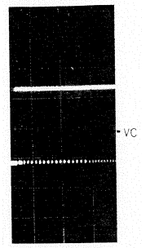
⑭CH1 : FEO
⑮CH2 : SPD
After

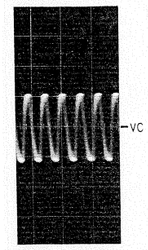
㉔L or R out
PLAY

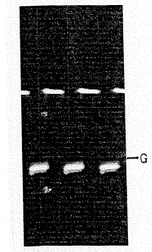
v.



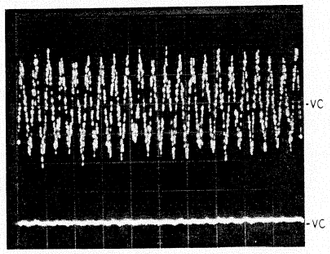
EARCH



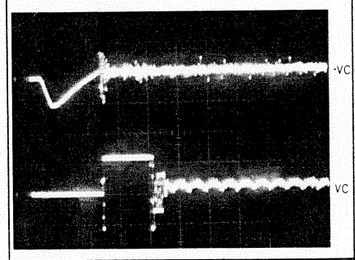




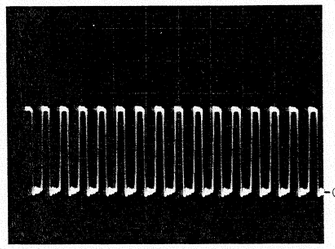
⑨CH1 : TEY 0.4V/div.
⑪CH2 : TAO 0.4V/div. 0.2ms/ div.
TRACK COUNT SEARCH



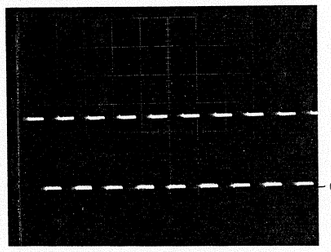
⑭CH1 : FEO2 1V/div.
⑮CH2 : SPDLO 1V/div. 0.2S/div
After 8cm disc loaded



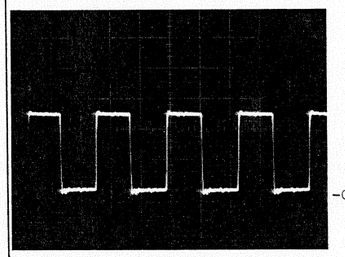
㉗BCLK2(IC704 Pin 9)
2V/div. 0.2μs/div.



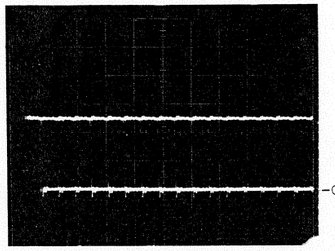
㉙LRCK(IC704 Pin 6)
2V/div.5μs/div.



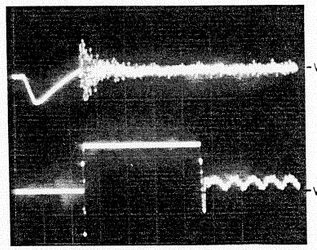
㉓BCLK1(IC703 Pin 7)
2V/div.0.2μs/div.



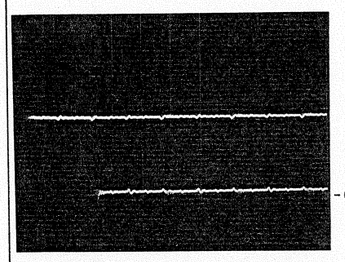
㉘DATA2(IC704 Pin 8)
2V/div. 0.2μs/div.



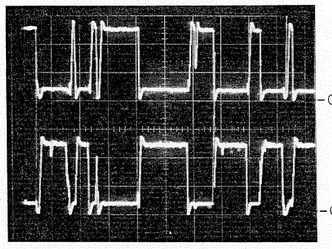
⑭CH1 : FEO2 1V/div.
⑮CH2 : SPDLO1V/div. 0.2S/div.
After 12cm disc loaded



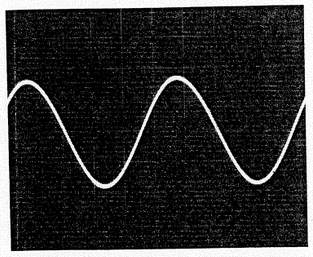
㉕DATA1(IC703 Pin 6)
2V/div.0.2μs/div.



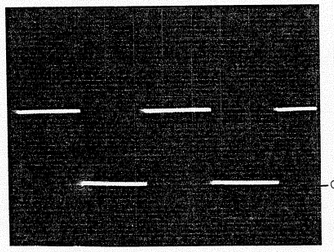
㉚ CH1: S+
㉛ CH2: S− 2V/div. 20ms /div
Test mode: Focus close
tracking Open



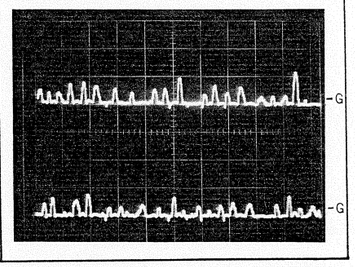
㉔L or R out 0.5V/div. 0.2ms/div.
PLAY(When 1kHz FS)



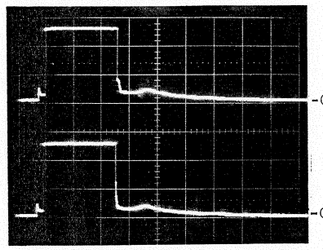
㉖LRCK1(IC703 Pin 5)
2V/div. 5μs/div.



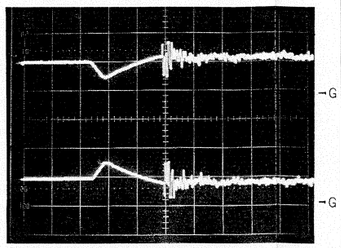
㉜ CH1: T+
㉝ CH2: T− 1V/div. 0.2ms /div.
Normal mode: PLAY



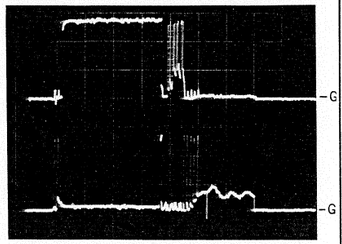
㉞ CH1: F+
㉟ CH2: F− 2V/div. 0.5S/div.
Regulator ON/OFF



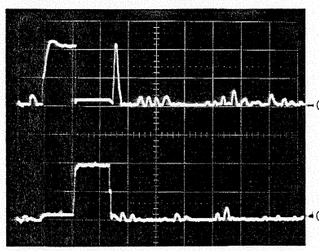
㉞ CH1: F+
㉟ CH2: F− 5V/div. 0.2S/div.
Focus close



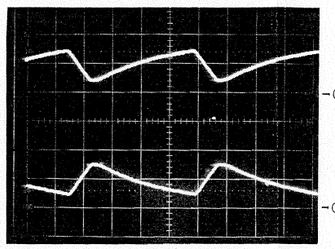
㊱ CH1: C+
㊲ CH2: C− 2V/div. 0.5S/div.
Normal mode: TNO1→TNO23 jump



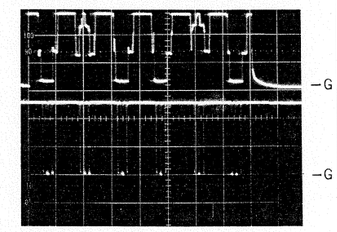
㉜ CH1: T+
㉝ CH2: T− 2V/div. 0.2ms /div.
Single jump forward



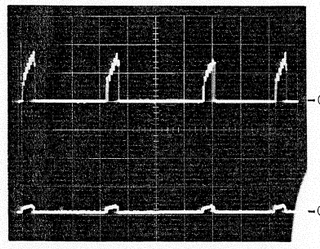
㉞ CH1: F+
㉟ CH2: F− 5V/div. 0.2S/div.
Search



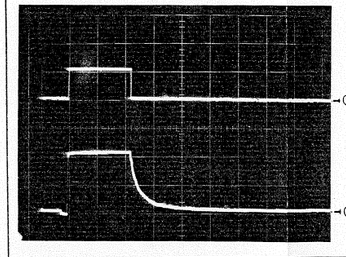
㊵ CH1: DISC
㊶ CH2: TIN 2V/div. 20ms /div.
Tray 1, 3, 4, 6: DISC (12cm DISC)
Tray 2, 5 : NO DISC



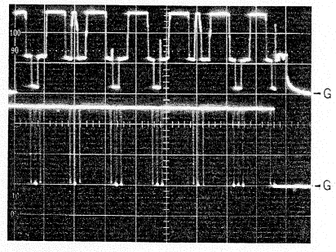
㊱ CH1: C+
㊲ CH2: C− 1V/div. 2S/div.
Normal PLAY



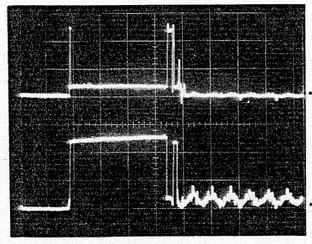
㊳ CH1: CONT
㊴ CH2: VD 5V/div. 0.5S/div.
Normal mode: Power ON/OFF



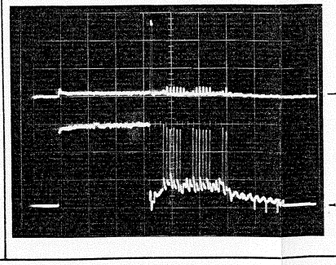
㊵ CH1: DISC
㊶ CH2: TIN 2V/div. 20ms /div.
Tray 1, 3, 4, 6: DISC (8cm DISC)
Tray 2,5 : NO DISC



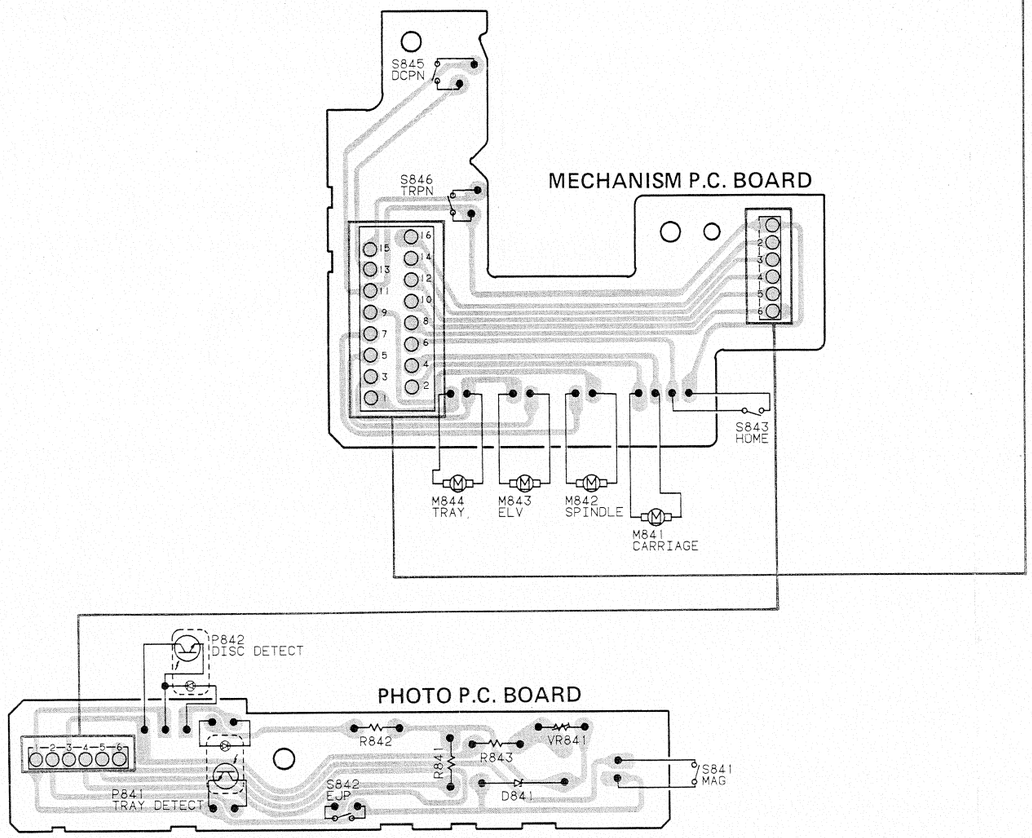
㉚ CH1: S+
㉛ CH2: S− 2V/div. 0.2S/div.
Normal mode: Power ON

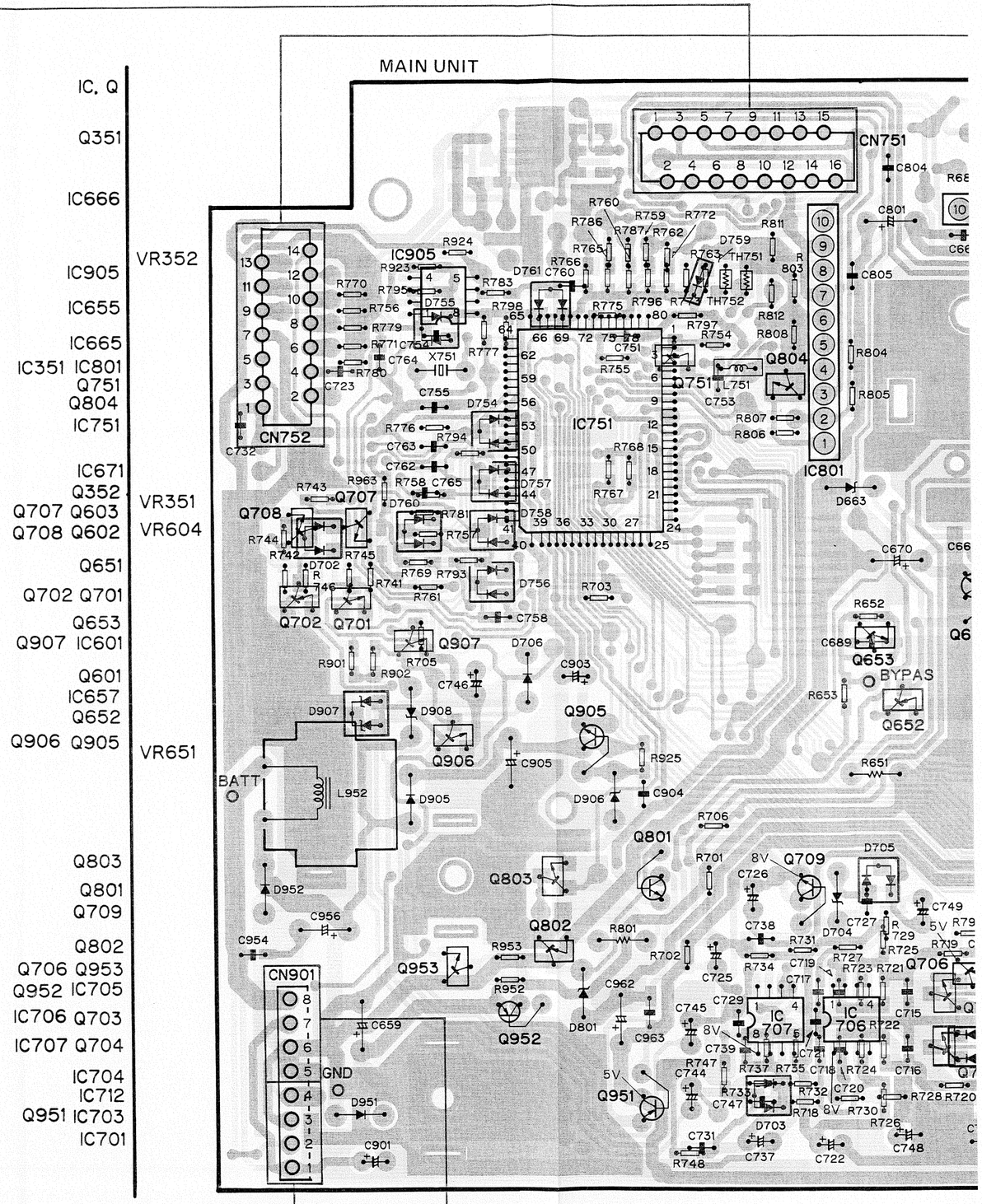


㊱ CH1: C+
㊲ CH2: C− 2V/div. 0.5S/div.
Normal mode: TNO23→TNO1 jump



3. CONNECTION DIAGRAM





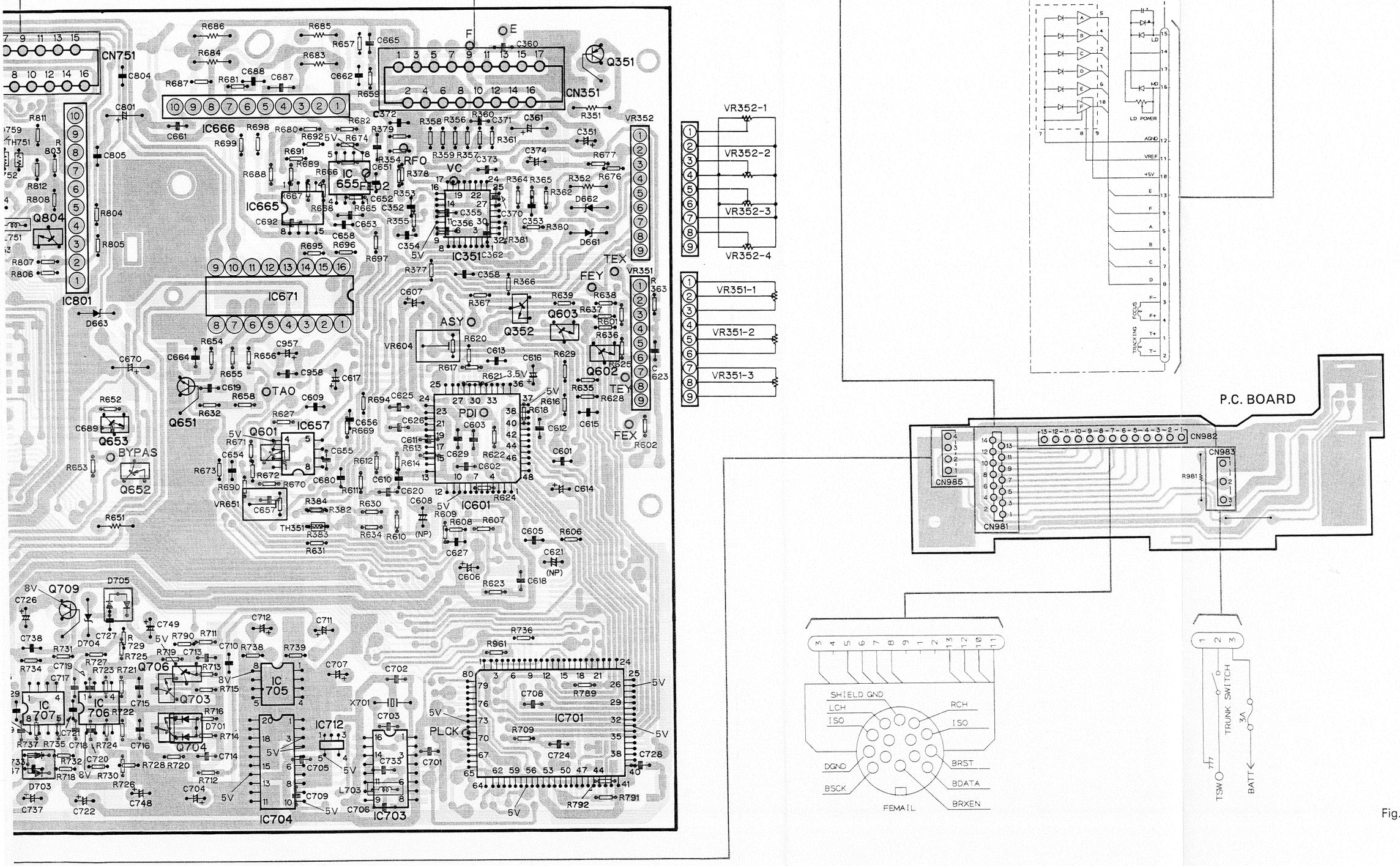
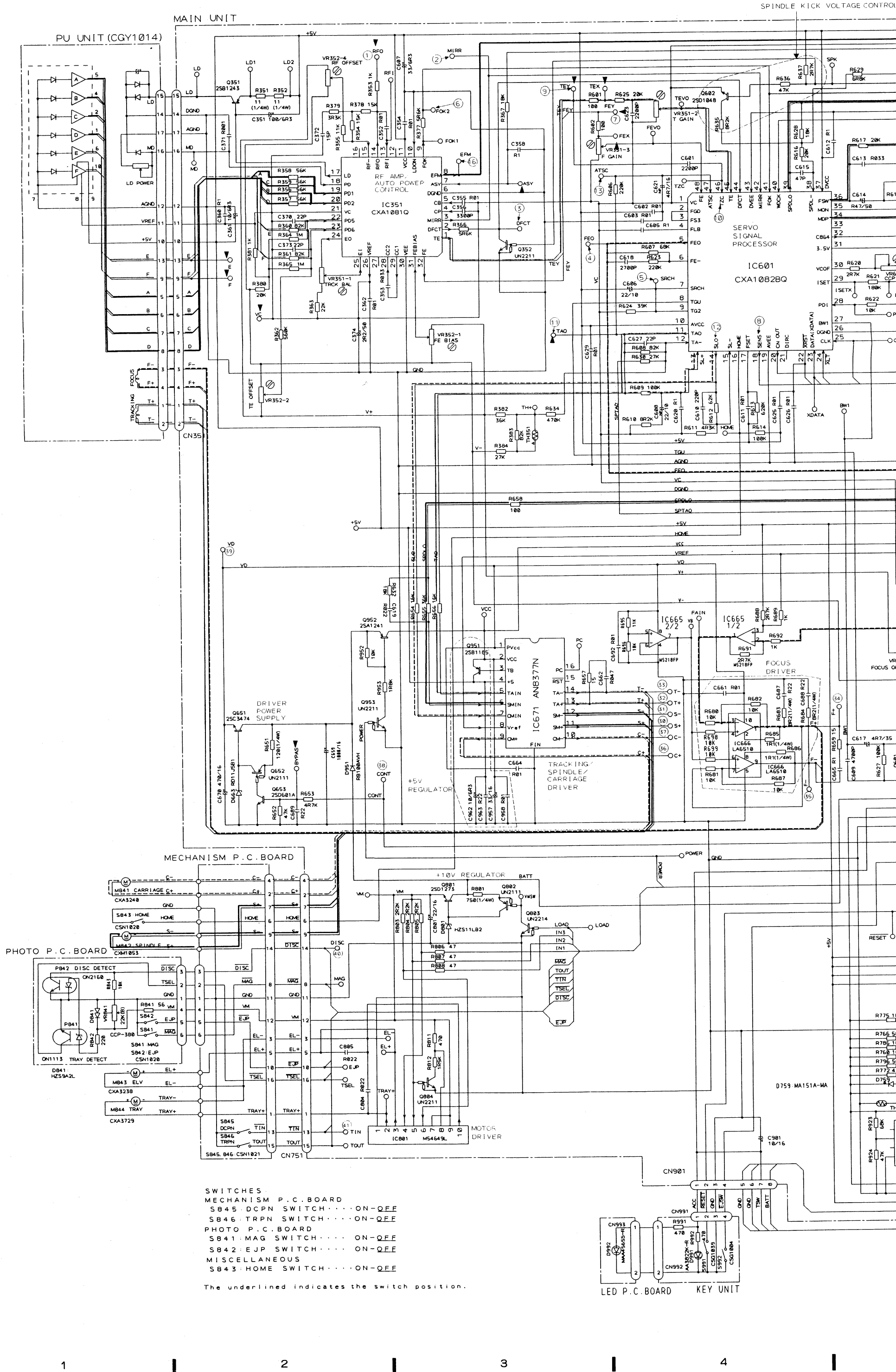

CN751
CN351
IC801
IC666
IC665
IC655
IC671
IC657
IC601
IC704
IC705
IC706
IC707
IC712
IC701
IC703
Q351
Q804
Q602
Q603
Q352
Q651
Q653
Q652
Q601
Q709
Q706
Q703
Q704
VR352
VR351
VR352-1
VR352-2
VR352-3
VR352-4
VR351-1
VR351-2
VR351-3
VC
PDI
ASY
TAO
BYPAS
TEX
FEY
TEY
FEX
RFO
PLCK
TH351
VR651
VR604
X701
D663
D662
D661
D705
D704
D703
D701
TH751
PU UNIT
LD
MD
LD POWER
AGND
VREF
+5V
FOCUS
TRACKING
P.C. BOARD
CN982
CN983
CN985
CN981
SHIELD GND
LCH
RCH
ISO
ISO
DGND
BRST
BSCK
BDATA
BRXEN
FEMAIL
TRUNK SWITCH
3A
TSW
BATT

Fig. 35

4. SCHEMATIC CIRCUIT DIAGRAM



SWITCHES

MECHANISM P.C.BOARD

S845 DCPN SWITCH ····ON-OFF

S846 TRPN SWITCH ····ON-OFF

PHOTO P.C.BOARD

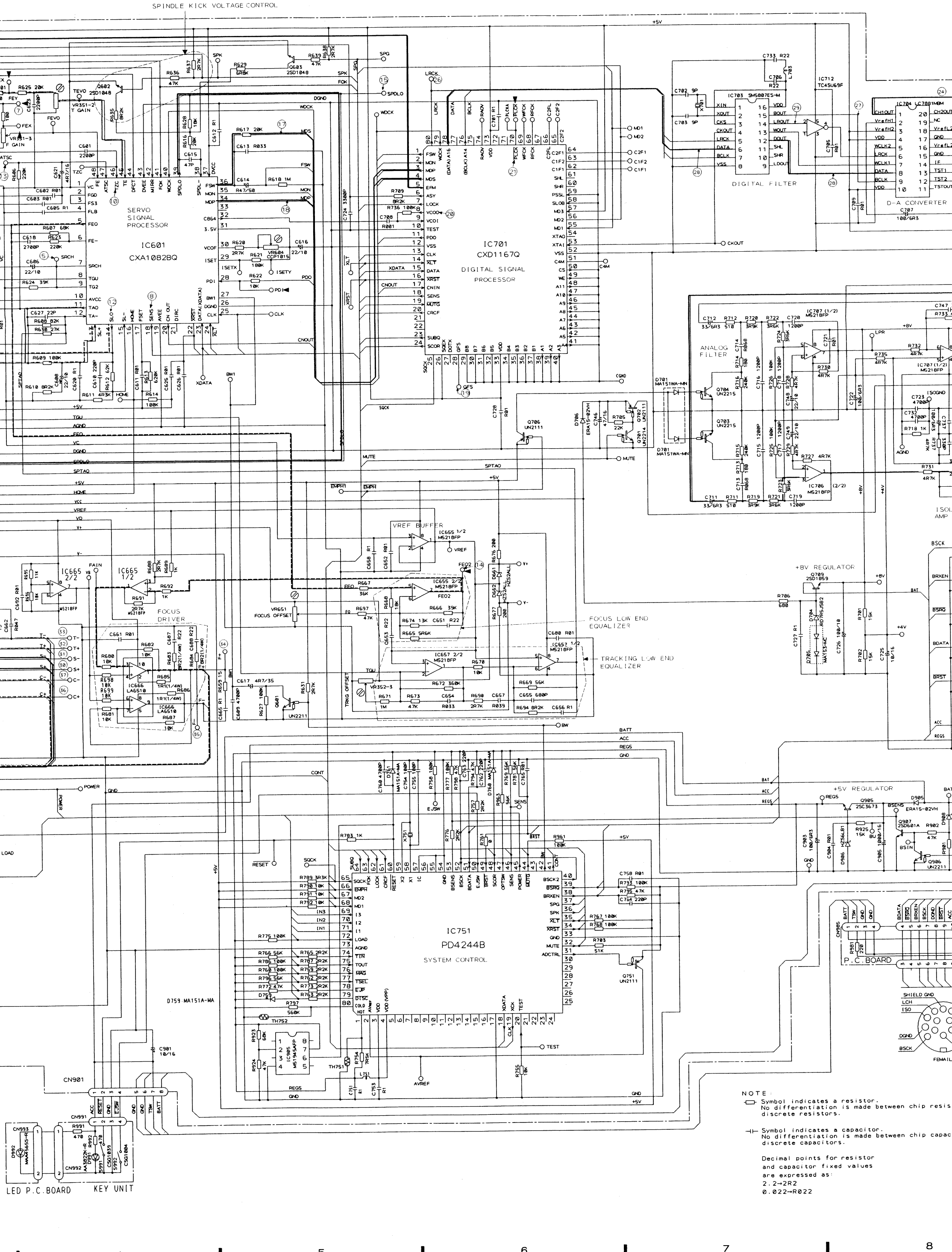
S841 MAG SWITCH ···· ON-OFF

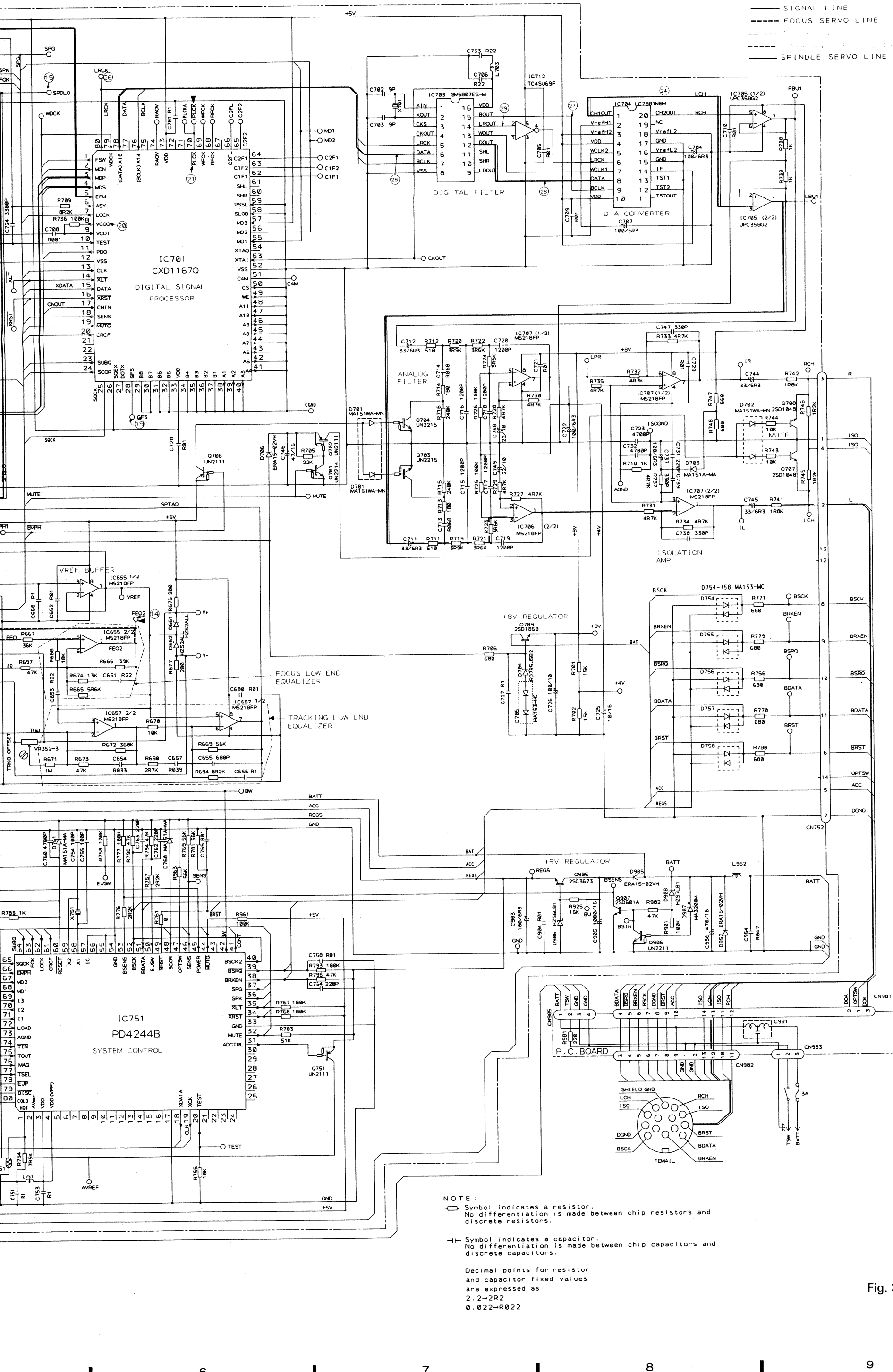
S842 EJP SWITCH ···· ON-OFF

MISCELLANEOUS

S843 HOME SWITCH ····ON-OFF

The underlined indicates the switch position.


SPINDLE KICK VOLTAGE CONTROL
SERVO SIGNAL PROCESSOR
IC601
CXA1082BQ
IC701
CXD1167Q
DIGITAL SIGNAL PROCESSOR
IC703 SM5807ES-M
DIGITAL FILTER
IC704 LC7881M6M
D-A CONVERTER
IC712 TC4SU69F
ANALOG FILTER
IC707 (1/2) M5218FP
IC706 M5218FP (2/2)
FOCUS DRIVER
IC665 2/2
IC665 1/2
IC666 LA6510
FOCUS OFFSET
FOCUS LOW END EQUALIZER
TRACKING LOW END EQUALIZER
VREF BUFFER
IC655 1/2 M5218FP
IC655 2/2 M5218FP
IC657 1/2 M5218FP
IC657 2/2 M5218FP
+8V REGULATOR
+5V REGULATOR
IC751
PD4244B
SYSTEM CONTROL
IC905 M51945AFP
D759 MA151A-MA
LED P.C.BOARD
KEY UNIT
P.C.BOARD
FEMAIL
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resis
discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capac
discrete capacitors.
Decimal points for resistor
and capacitor fixed values
are expressed as:
2.2→2R2
0.022→R022



NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 36

5. CD MECHANISM EXPLODED VIEW

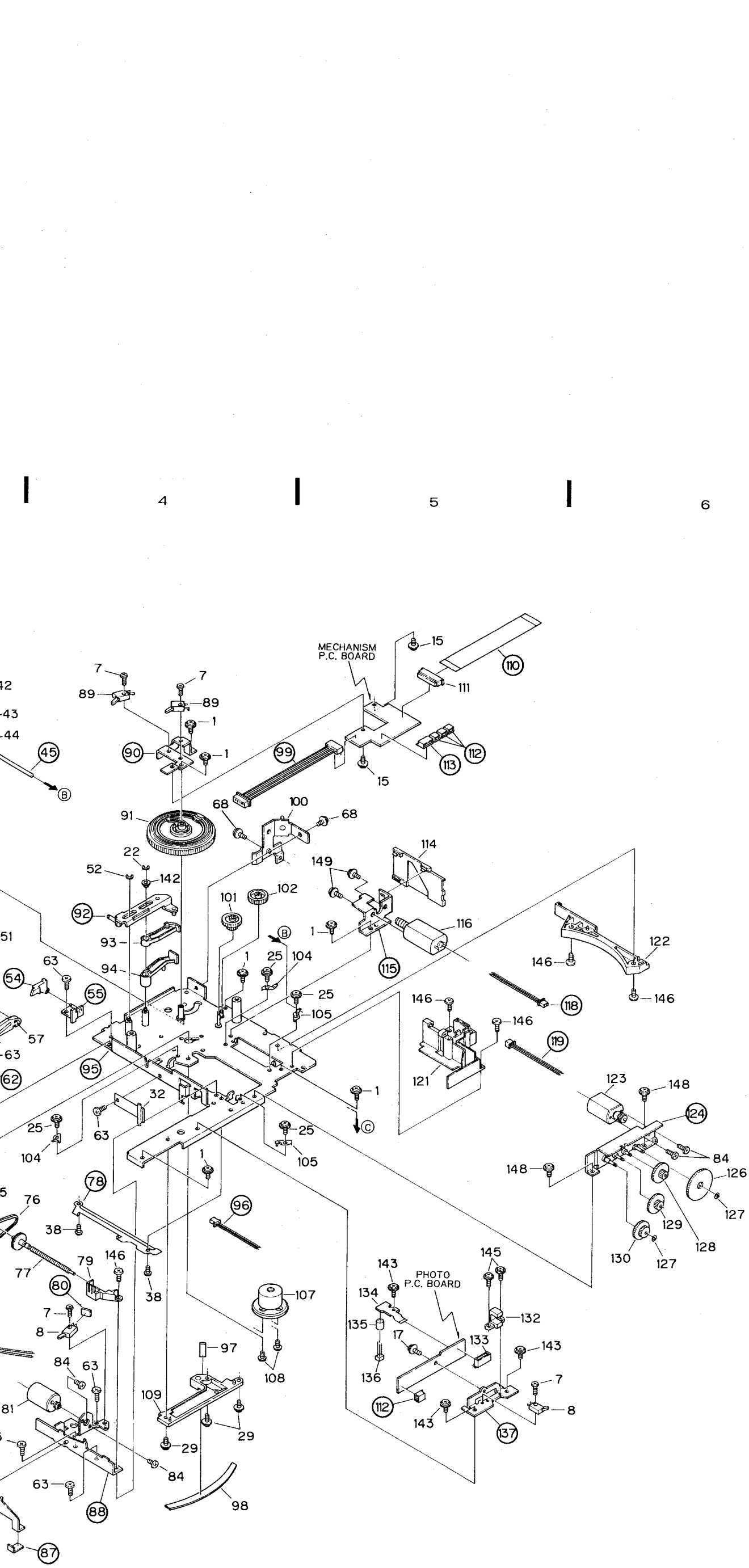


Fig. 37

NOTE:

- *The parts marked with "◉" may need long time to supply subject to refuse as the case may be.*
- *Because the parts with encircled number shown on the disn not spare parts, we are unable to supply them in principle.*

● Parts List

Mark	No.	Description	Part No.	Mar
A	1	Screw	PMS20P030FMC	
	2	Frame	CNC3455	
	3	Spring	CBH1324	
	4	Spring Holder	CNC3054	
	5	Connector	CDE2701	
—	6	P.C.Board	CNP2593	
	7	Screw	CBA1070	
	8	Switch	CSN1020	
	9	EJ Spring	CBH1402	
	10	Clamper	CNV2375	
B	11	Magazine Holder Unit	CXA3231	
	12	Spring	CBH1320	
	13	Roller	CLA1756	
	14	Arm	CNV2593	
	15	Screw	CBA1075	
—	16	Magazine Guide	CNV2369	
	17	Screw	CBA1077	
	18	Magazine Holder	CNC3039	
	19	Damper Unit	CXA3242	
	20	Magazine Guide	CNV2368	
C	21	Arm	CNV2352	
	22	Washer	YE15FUC	
	23	Side Frame Unit	CXA4273	
	24	Roller	CLA1846	
	25	Screw	PMS20P022FMC	
—	26	Cushion	CNM2555	
	27	·····		
	28	·····		
	29	Screw	CBA1080	
	30	Arm Guide	CNV2372	
D	31	Chassis Unit	CXA4274	
	32	Tray Stopper Unit	CXA3514	
	33	ELV Spring	CBH1322	
	34	Spring	CBH1321	
	35	Clamper	HEF-102	
	36	Bracket Unit	CXA3673	
	37	Bracket Unit	CXA3235	
	38	Screw	CBA1062	
	39	Holder Unit	CXA1860	
	40	Cushion	CNV1863	

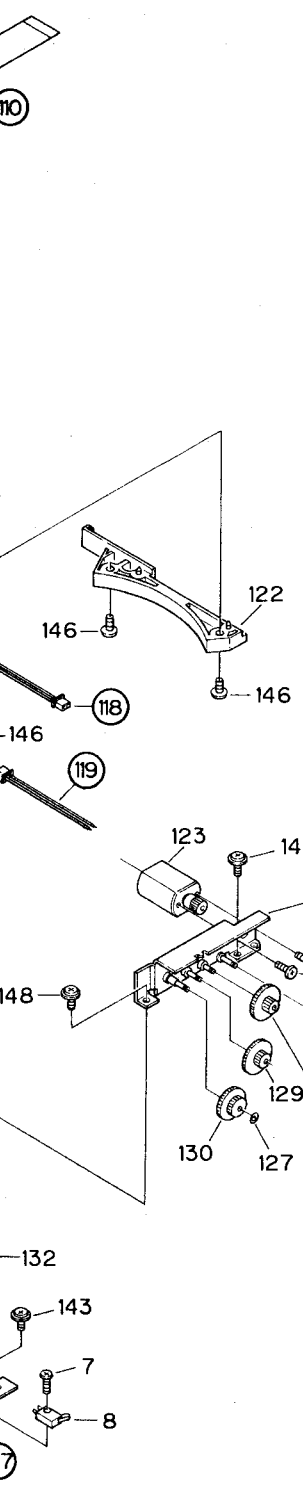


Fig. 37

NOTE:

- *The parts marked with "◉" may need long time to supply and their supply is subject to refuse as the case may be.*
- *Because the parts with encircled number shown on the dismantling drawing are not spare parts, we are unable to supply them in principle.*

● Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	PMS20P030FMC	41	Screw	CLA1319
2	Frame	CNC3455	42	Holder	CNC1736
3	Spring	CBH1324	43	Spring	CBH1105
4	Spring Holder	CNC3054	44	Holder	CNV1512
5	Connector	CDE2701	45	Shaft	CLA1196
6	P.C.Board	CNP2593	46	PU Unit	CGY1014
7	Screw	CBA1070	47	Shaft	CLA1197
8	Switch	CSN1020	48	Spring	CBH1106
9	EJ Spring	CBH1402	49	Rack	CNV1513
10	Clamper	CNV2375	50	Arm Unit	CXA3995
11	Magazine Holder Unit	CXA3231	51	Washer	YE20FUC
12	Spring	CBH1320	52	Washer	YE25FUC
13	Roller	CLA1756	53	Lever Unit	CXA3542
14	Arm	CNV2593	54	Arm	CNV2726
15	Screw	CBA1075	55	Bracket Unit	CXA3387
16	Magazine Guide	CNV2369	56	Lever	CNC3038
17	Screw	CBA1077	57	Cam Arm	CNV2354
18	Magazine Holder	CNC3039	58	Disc UP Collar	CLA1895
19	Damper Unit	CXA3242	59	Arm Unit	CXA4043
20	Magazine Guide	CNV2368	60	Washer	CBE1027
21	Arm	CNV2352	61	Guide	CNR1163
22	Washer	YE15FUC	62	Bracket Unit	CXA3227
23	Side Frame Unit	CXA4273	63	Screw	BMZ20P025FMC
24	Roller	CLA1846	64	Holder	CNV2370
25	Screw	PMS20P022FMC	65	Disc UP Spring	CBH1323
26	Cushion	CNM2555	66	Disc UP Guide Unit	CXA3236
27	·····		67	Sheet	CNM2552
28	·····		68	Screw	PMS26P030FMC
29	Screw	CBA1080	69	·····	
30	Arm Guide	CNV2372	70	·····	
31	Chassis Unit	CXA4274	71	Bracket Assy	CXA3788
32	Tray Stopper Unit	CXA3514	72	Arm Unit	CXA3230
33	ELV Spring	CBH1322	73	Spring	CBH1104
34	Spring	CBH1321	74	Spacer	CNV1844
35	Clamper	HEF-102	75	CRG Holder	CNV2377
36	Bracket Unit	CXA3673	76	Belt	CNT1020
37	Bracket Unit	CXA3235	77	Screw Unit	CXA2375
38	Screw	CBA1062	78	Shaft Cover	CNC3685
39	Holder Unit	CXA1860	79	CRG Holder	CNV2378
40	Cushion	CNV1863	80	P.C.Board	CNP1107

Mark No.	Description	Part No.
81	Motor Unit(Carriage)	CXA3240
82	Connector	CDE3149
83	·····	
84	Screw	CBA-098
85	Spring	CBH1335
86	8cm Guide Arm	CNC3154
87	Sheet	CNM2630
88	CRG Bracket	CNC3044
89	Switch	CSN1021
90	Bracket	CNC3045
91	Cam Gear	CNV2357
92	Cam Lever Unit	CXA3232
93	SW Arm	CNV2374
94	SW Arm	CNV2356
95	Chassis Unit	CXA4011
96	Connector	CDE3152
97	Sheet	CNM2554
98	Sheet	CNM2553
99	Connector	CDE2699
100	Bracket Unit	CXA4014
101	Wheel	CNV2359
102	Gear	CNV2360
103	·····	
104	Holder	CNC1738
105	Holder	CNC1739
106	·····	
107	Motor Unit(Spindle)	CXM1053
108	Screw	HBA-258
109	Disc Guide	CNV2366
110	Connector	CDE2705
111	Connector	CKS1536
112	Plug	CKS1049
113	Plug	CKS1051
114	Holder	CNV2373
115	Tray Bracket	CNC3598
116	Tray Motor Unit	CXA3729
117	·····	
118	Connector	CDE3151
119	Connector	CDE3150
120	·····	
121	Guide	CNV2376
122	Disc Guide	CNV2367
123	Motor Unit(ELV)	CXA3238
124	ELV Bracket Unit	CXA3234
125	Cushion	CNT1023
126	Gear	CNV2362
127	Washer	CBF1038
128	Gear(Brack)	CNV2363
129	Gear(White)	CNV2371
130	Gear(White)	CNV2364
131	·····	
132	Photo-Interrupter	ON1113
133	Plug	CKS1053
134	P.C.Board	CNP2307
135	Spacer	CNV2365
136	Photo-Interrupter	ON2160
137	TSEL Bracket	CNC3052
138	·····	
139	Screw	BMZ26P030FMC
140	·····	
141	·····	
142	Roller	CLA1518
143	Screw	CBA1152
144	Frame	CNC3456
145	Screw	CBA1026
146	Screw	CBA1054
147	Spring	CBL1124
148	Screw	BMZ20P030FMC
149	Screw	PMS20P025FMC
150	Spring	CBH1324
151	Holder	CNC3054

6. CHASSIS EXPLODED VIEW

Mark	No.	Description	Part No.
	1-3	·····	
	4	Screw	BMZ40P080FRD
	5	Screw	PMS30P050FZK
	6	·····	
	7	Pin	CLA1822
	8	·····	
	9	·····	
	10	Screw	CBA1157
	11	Damper	CNV2605
	12	Screw	PMS30P050FMC
	13	Grille Unit	CXA3415
	14	Cushion	CNM2760
	15	Spring	CBH1308
	16	Lever	CNV2310
	17	Spacer	CNM2629
	18	Button	CAC3030
	19	Spacer	CNM2713
	20	Shaft	CLA1713
	21	Shaft	CLA1705
	22	Spring	CBH1360
	23	Spring	CNC3277
	24	Door	CAT1399
	25	Gear	CNV2287
	26	Damper Unit	CXA3253
	27	Screw	BPZ20P080FMC
	28	Screw	PMZ30P040FZK
	29	Spring	CBH1379
	30	Spring	CBH1377
	31	Chassis Assy	CXA3416
◉	32	Eject Unit	CWM2769
	33	Screw	BPZ26P060FMC
	34	Plug	CKS1634
	35	·····	
	36	Holder	CNC3068
	37	Plug	CKS-460
	38	Connector	CKS-479
	39	Plug	CKS-470
	40	Connector	CKS1566
	41	Screw	BMZ26P050FZK
	42	P.C.Board	CNP2202
◉	43	CD Mechanism Unit	CXK2370
	44	Bracket	CNC2965
	45	Holder	CNV2474
	46	Connector	CDE2949
	47	Screw	BMZ26P050FMC
	48	Screw	CBA1158
◉	49	Main Unit	CWX1259
	50	Cord	CDE2833
	51	Cord	CDE3410
	52	·····	
	53	Connector	CKS1537
	54	Screw	JGZ17P050FNi
	55	Heat Sink	CNC3087
	56	Connector	CKS1536
	57	Connector	CKS1534
	58	Screw	CBA1159
	59	Plug	CKS-474
	60	Bracket	CNC3557
	61	·····	
	62	Screw	PMS26P080FMC
	63	Connector	CDE3169
	64	Case	CNB1352
	65	Case	CNB1519
	66	·····	
	67	Screw	BMZ26P050FMC
	68	Cord Holder	CNV2580
	69	Sheet	CNM3082
	70	·····	
	71	Clamper	HEF-102
	72	·····	
	73	Connector	CDE2719
	74	Screw	BPZ26P060FMC
	75	Plug	CKS1049
	76	·····	
	77	·····	
	78	Plate	CNC3299

● **Chassis**

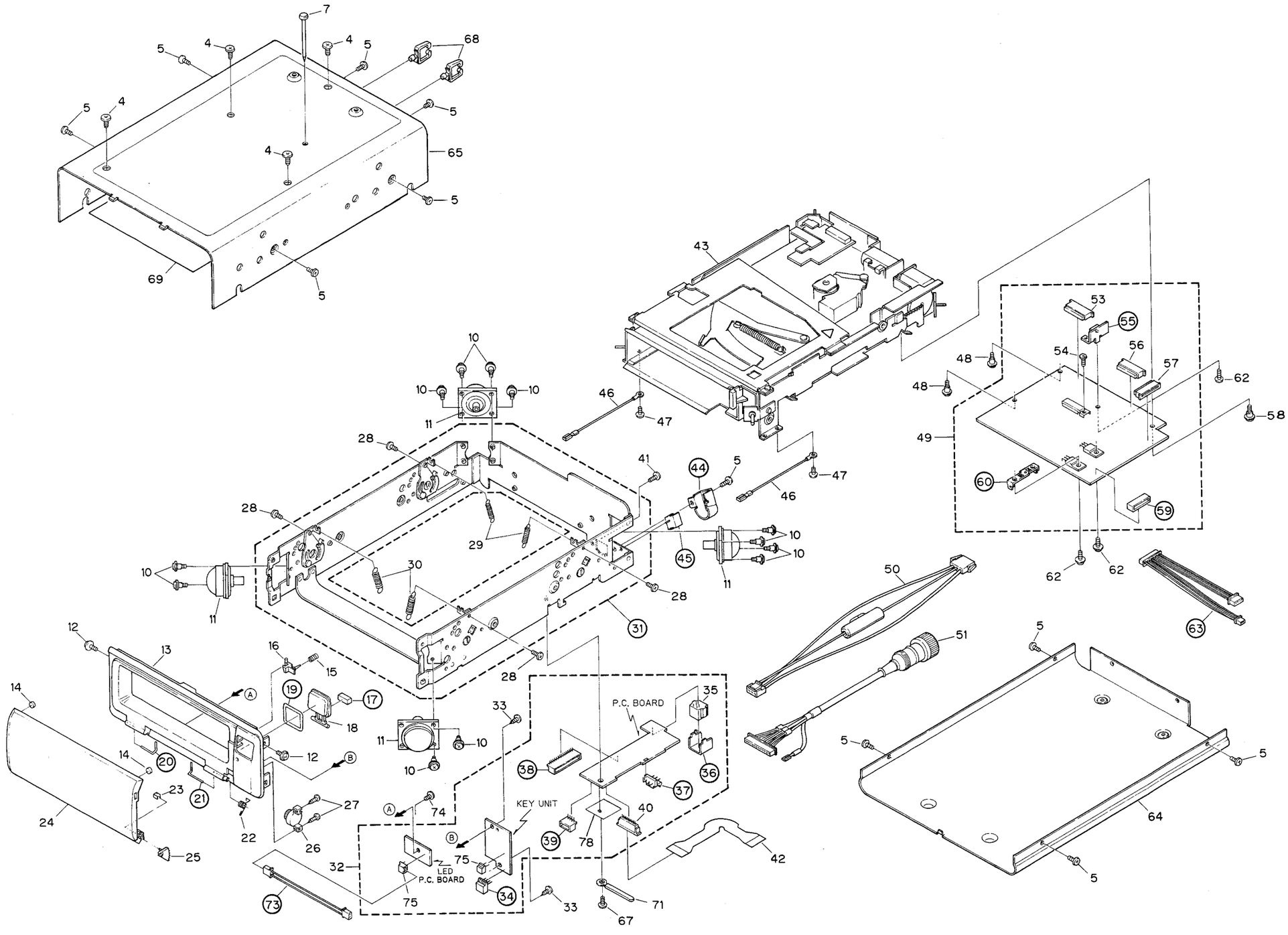


Fig. 38

7. MAGAZINE (PXA1154) EXPLODED VIEW

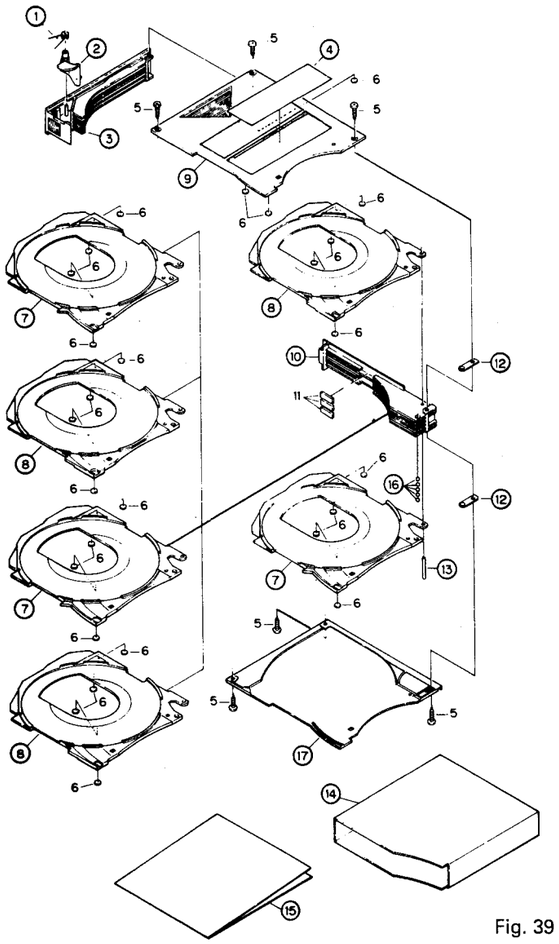


Fig. 39

● **Parts List**

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Spring M	PBH1067	11	Cushion Rubber	PNM1011
2	Lever	PNW1386	12	Spring	PBK-085
3	Case F	PNW1127	13	Shaft	PLB-281
4	Caution Label	PRW-163	14	PP Case	PHN1018
5	Screw	BPZ20P080FZK	15	Label	PRW1083
6	Cushion	PED-049	16	Ball	PBP-005
7	Tray A	PNW1442	17	Case B	PNW1129
8	Tray B	PNW1443			
9	Case T	PNW1126			
10	Case L	PNW1128			

8. PACKING METHOD

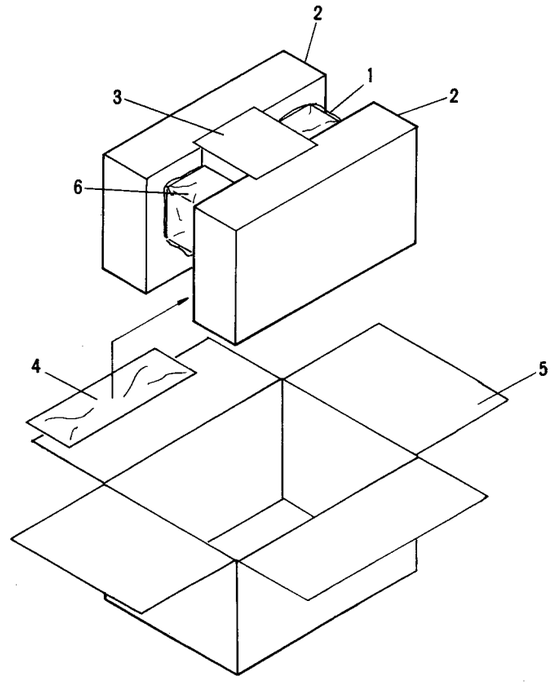


Fig. 40

● **Parts List**

Mark No.	Description	*:Non Spare Part Part No.
1	Cover	CEG1091
2	Styrofoam (× 2)	CHP1423
3	Magazine	PXA1154
4	Accessory Assy	CEA1665
* 4-1	Label	CRW1162
* 4-2	Card	CRY1048
5	Carton	CHG2029
6	Seal	CNM2887

9. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor
RS1/8S □□□J, RS1/10S □□□J
Chip Capacitor (except for CQS.....)
CKS....., CCS....., CSZS.....

Unit Number :
Unit Name : Key Unit

Mark	Circuit Symbol & No.	Part Name	Part No.
D	991	LED	AA3822K-R
S	991	Switch (RESET)	CSG1039
S	992	Switch (EJECT)	CSG1004
R	991 992		RD1/4PS471JL

Unit Number :
Unit Name : P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
R	981		RS1/2P221JL
C	981		CCG-105

Unit Number :
Unit Name : LED P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
D	992	LED	MAA4565S-R

Unit Number :
Unit Name : Main Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	351		CXA1081Q
IC	601		CXA1082BQ
IC	655 657 665 706 707		M5218FP
IC	666		LA6510
IC	671		AN8377N
IC	701		CXD1167Q
IC	703		SM5807ES-M
IC	704		LC7881MBM
IC	705		UPC358G2
IC	712		TC4SU69F
IC	751		PD4244B
IC	801		M54649L
IC	905		M51945AFP
Q	351		2SB1243
Q	352 804 953	Chip Transistor	UN2211
Q	601 906	Chip Transistor	UN2211
Q	602 603 707 708	Chip Transistor	2SD1048
Q	651		2SC3474
Q	652 706 802	Chip Transistor	UN2111
Q	653	Chip Transistor	2SD601A
Q	701 803	Chip Transistor	UN2214
Q	702 751	Chip Transistor	UN2111
Q	703 704	Chip Transistor	UN2215
Q	709		2SD1859
Q	801		2SD1273
Q	905		2SC3673
Q	907	Chip Transistor	2SD601A
Q	951		2SB1185
Q	952		2SA1241
D	661 662		HZS2ALL
D	663		RD11JSB1
D	701	Chip Diode	MA151WA-MN
D	702	Chip Diode	MA151WA-MN
D	703 759 760 761	Chip Diode	MA151A-MA
D	704		RD7R5JSB2
D	705 754 755 756 757 758	Chip Diode	MA153-MC
D	706 905 952		ERA15-02VH
D	801		HZS11LB2
D	906		HZS6LB1
D	907	Chip Diode	MA3200M
D	908		HZS7LB1
D	951		RB100AVH
L	703	Inductor	CTF1082
L	751	Inductor	CTF1082
L	952	Choke Coil	CTH1074
TH	351	Thermister	CCX1006
TH	751 752	Thermister	CCX1007
X	701	Crystal Resonator	CSS1052
X	751		CSS1038
VR	351	Semi-fixed	CCP1005
VR	352	Semi-fixed	CCP1006
VR	604	Semi-fixed	CCP1015
VR	651	Semi-fixed	CCP1023

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	351 352		RD1/4PS110JL
R	353 381 689 783		RS1/10S102J
R	354 378 701 702		RS1/10S153J
R	355		RS1/10S113J
R	356 357 358 359 781		RS1/10S563J
R	360 361 608		RS1/10S823J
R	362		RS1/10S564J
R	363		RS1/10S223J
R	364 365 618 671		RS1/10S105J
R	366 377		RS1/10S562J
R	367 628		RS1/10S183J
R	379		RS1/10S332J
R	380 617 625		RS1/10S203J
R	382 655 667		RS1/10S363J
R	383		RS1/10S823J

DX-M92ZBM

Mark	Circuit Symbol & No.	Part Name	Part No.
R	384		RS1/10S273J
R	601 602		RS1/10S101J
R	606		RS1/10S224J
R	607 923		RS1/10S683J
R	609 614 627 725 726 758 760 767		RS1/10S104J
R	610 709		RS1/10S822J
R	611		RS1/10S432J
R	612		RS1/10S623J
R	613		RS1/10S624J
R	616		RS1/10S203J
R	620 631 637 638 691		RS1/10S272J
R	621		RS1/10S184J
R	622 670 680 681 682 755 791 792		RS1/10S103J
R	623		RS1/10S224J
R	624 666		RS1/10S393J
R	629		RS1/10S682J
R	630		RS1/10S273J
R	632 668		RS1/10S183J
R	634		RS1/10S474J
R	635 694		RS1/10S822J
R	636 639 673 924		RS1/10S473J
R	651		RD1/4PS121JL
R	652 697 772 794 795 798 902		RS1/10S473J
R	653		RS1/10S472J
R	654 656		RS1/10S163J
R	657		RS1/10S150J
R	658		RS1/10S101J
R	659		RS1/10S150J
R	665		RS1/10S562J
R	669 766 769 796 963		RS1/10S563J
R	672		RS1/10S364J
R	674		RS1/10S133J
R	676		RS1/10S201J
R	677		RS1/10S201J
R	683 684		RD1/4PS8R2JL
R	685 686		RD1/4PS1R1JL
R	687 790 952		RS1/10S103J
R	688 690		RS1/10S272J
R	692 718 738 739		RS1/10S102J
R	695		RS1/10S113J
R	696 698 699		RS1/10S103J
R	703		RS1/10S513J
R	705		RS1/10S223J
R	706 756 770 771 779 780		RS1/10S681J
R	711 712		RS1/10S511J
R	713 714		RS1/10S181J
R	715 716		RS1/10S244J
R	719 720		RS1/10S392J
R	721 722 723 724		RS1/10S362J
R	727 728 729 730		RS1/10S472J
R	731 732 733 734		RN1/10SE472D
R	735 737		RN1/10SE472D
R	736		RS1/10S104J
R	741 742 953		RS1/10S182J
R	743 744		RS1/10S103J
R	745 746		RS1/10S122J
R	747		RS1/10S561J
R	748		RS1/10S681J
R	754		RS1/10S752J
R	757 759 762 763 765 773 776 787 803 804		RS1/10S222J

Mark	Circuit Symbol & No.	Part Name	Part No.
R	761		RS1/10S0R0J
R	768 775 777 786 793 901 961		RS1/10S104J
R	789		RS1/10S332J
R	797		RS1/10S564J
R	801		RD1/4PS751JL
R	805		RS1/10S222J
R	806 807 808		RS1/10S470J
R	811		RS1/10S471J
R	812		RS1/10S152J
R	925		RS1/10S153J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	351 704 707 722 737 903		CEA101M6R3LL
C	352 354 652 680 710 721 729 765		CKSQYB103K50
C	353 613 654		CKSQYB333K25
C	355 362 602 603 611 625 626 629 661 664		CKSQYB103K50
C	356 724		CKSQYB332K50
C	358 605 656 658 727		CKSQYB104K25
C	360 612 620 665 701		CKSQYB104K25
C	361 962		CASA100M6R3
C	370 373		CCSQCH220J50
C	371 708		CKSQYB102K50
C	372		CCSQCH150J50
C	374		CEA2R2M50LL
C	601		CKSQYB222K50
C	606 615 748 749		CEA220M10LL
C	607		CEA330M6R3LL
C	608		CEA220M10NPLL
C	609 760		CKSQYB472K50
C	610 731 762 763		CCSQCH221J50
C	614		CEAR47M50LL
C	615		CCSQCH470J50
C	617		CEA4R7M35LL
C	618		CKSQYB272K50
C	619		CKSQYB223K50
C	621		CEA4R7M16NPLL
C	623		CKSQYB222K50
C	627		CCSQCH220J50
C	651 653 687 689 963		CKSYB224K25
C	655		CCSQSL681J50
C	657		CKSQYB393K25
C	659 905 1000μF/16V		CCH1003
C	662		CKSQYB473K25
C	670 470μF/16V		CCH1080
C	688		CKSYB224K25
C	692 705 709 728 758 958		CKSQYB103K50
C	702 703		CCSQCH090D50
C	706		CKSYB224K25
C	711 712		CEA330M6R3LS
C	713 714		CKSQYB683K25
C	715 716 717 718 719 720		CCSQCH122J50
C	723 732		CKSQYB472K50
C	725 901		CEA100M16LL
C	726		CEA101M10LL
C	733		CKSYB224K25
C	738 747		CCSQCH331J50
C	739		CCSQCH331J50

Mark	Circuit Symbol & No.	Part Name	Part No.
C	744 745		CEA330M6R3LS
C	746		CEA470M16LL
C	751		CKSQYB104K25
C	753		CKSQYB104K25
C	754 755		CCSQCH101J50
C	764		CCSQCH221J50
C	801		CASA220M16
C	804 805		CKSQYB223K50
C	904		CKSQYB103K50
C	954		CKSQYB473K25
C	956		CEA471M16L2
C	957		CEA330M16LL

Unit Number :
Unit Name : Mechanism P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
M	841	Motor Unit(Carriage)	CXA3240
M	842	Motor Unit(Spindle)	CXM1053
M	843	Motor Unit(ELV)	CXA3238
M	844	Tray Motor Unit	CXA3729
S	843	Switch(Home)	CSN1020
S	845 846	Switch(DCPN, TRPN)	CSN1021

Unit Number :
Unit Name : Photo P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
D	841		HZS9A2L
P	841	Photo-Interrupter	⊖N1113
P	842	Photo-Interrupter	⊖N2160
VR	841	Semi-fixed 22kΩ(B)	CCP-380
S	841 842	Switch(MAG, EJP)	CSN1020
R	841		RD1/4PS560JL
R	842		RD1/4PS221JL
R	843		RD1/4PS103JL

Miscellaneous Parts List

Mark	Circuit Symbol & No.	Part Name	Part No.
		PU Unit	CGY1014

10. CONNECTOR FUNCTION DESCRIPTION

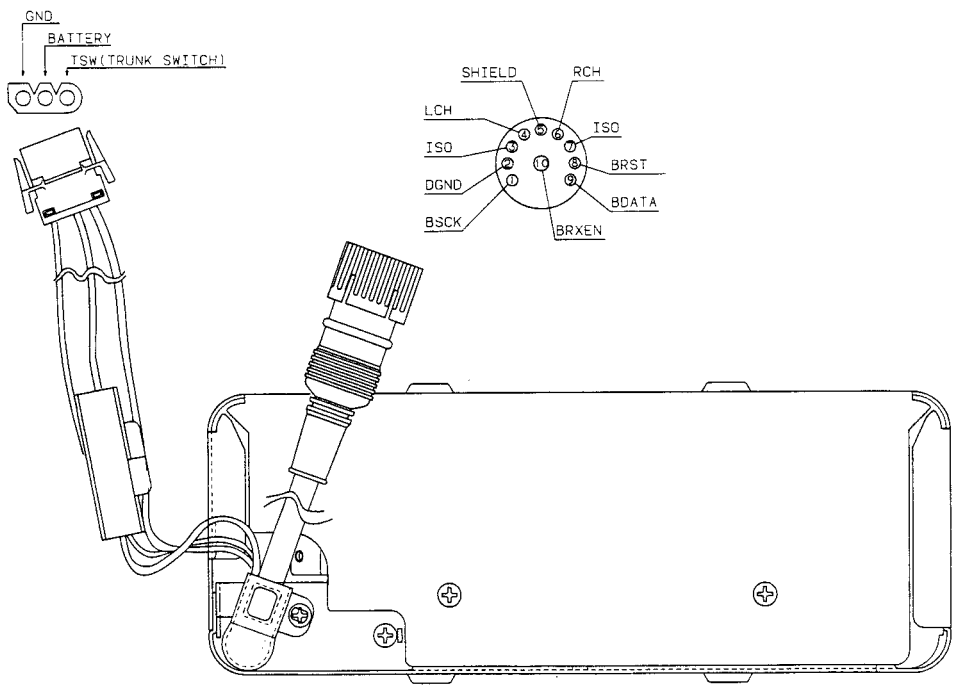


Fig. 41